

EXHIBIT G

REDACTED

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF PENNSYLVANIA**

LAMBETH MAGNETIC STRUCTURES,)	
LLC)	
)	
Plaintiff,)	Civil Action No. 16-538
)	
v.)	
)	Judge Cathy Bissoon
SEAGATE TECHNOLOGY (US))	
HOLDINGS, INC., SEAGATE)	
TECHNOLOGY LLC)	
)	
Defendants.)	
_____)	

REPLY EXPERT REPORT OF CATHARINE M. LAWTON

August 3, 2018

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I. INTRODUCTION

A. Assignment

1. I am Catharine M. Lawton, a Managing Director at Berkeley Research Group, LLC (“BRG”). I have been retained by Bunsow De Mory LLP, counsel to Lambeth Magnetic Structures, LLC (“LMS”), as an intellectual property damages expert in the patent infringement matter, *Lambeth Magnetic Structures, LLC v. Seagate Technology (US) Holdings, Inc., Seagate Technology, LLC* (collectively, “Seagate”), filed on April 29, 2016.¹
2. On April 30, 2018, I filed an expert report (the “Initial Report”) that addressed LMS’s claim for damages, assuming liability. The Initial Report includes my Qualifications, Independence and Compensation Disclosure, Documents and Information Considered, Status of My Study and Assumptions, as well as the substantive relevant facts that form the basis for my opinion, among other matters, all which are incorporated by reference.
3. I have been asked to address the opinions set forth in the Rebuttal Expert Report of John C. Jarosz dated July 16, 2018² (the “Jarosz Report”). Mr. Jarosz is a Managing Principal at Analysis Group.³ Mr. Jarosz has testified on behalf of Seagate in at least one previous matter, *Siemens AG v. Seagate Technology LLC*.
4. This report (the “Reply Report”) together with the Initial Report sets forth the opinions about which I expect to testify at trial if asked to do so, along with the bases and reasons for these opinions based on my assignment, the information I have reviewed, and my analysis as of August 3, 2018. I reserve the right to amend the opinions expressed in this report based upon any additional information that I receive.

B. Documents and Information Considered

5. The information I considered in connection with the preparation of the Initial Report is set forth in Exhibit C of that report. The Exhibit C to this Reply Report incorporates the documents I considered in connection with the preparation of the Initial Report together with certain additional documents that I have considered in connection with the preparation of this Reply Report.

¹ LMS Complaint and Demand for Trial by Jury filed April 29, 2016, U.S. District Court, Western District of Pennsylvania, Civil Action No. 2:16-cv-00538-CB.

² July 16, 2018 Rebuttal Expert Report of John C. Jarosz (hereinafter “Jarosz Report”).

³ Jarosz Report, ¶ 7 (p. 3).

II. SUMMARY OF OPINIONS

6. This Reply Report summarizes my opinions regarding Mr. Jarosz’ work and opinions as set forth in the Rebuttal Expert Report of John C. Jarosz dated July 16, 2018. In addition to his “Summary of Conclusions,”⁴ Mr. Jarosz’ substantive opinions and the basis for his opinions are set forth in four (4) sections:
 - **II. Background**⁵
 - **III. Damages Framework**⁶
 - **IV. Lawton Report**⁷
 - **V. Jarosz Analysis.**⁸
7. In this report, I summarize the differences between my damages opinion and Mr. Jarosz’ damages opinion and address each of the substantive sections—II., IV. And V.—in Mr. Jarosz’ Report.
8. There are significant differences between my damages opinion and the basis of my opinions and Mr. Jarosz’ damages opinion and the basis for his opinions. Mr. Jarosz has opined that he agrees with my opinions regarding certain key facts which are fundamental to the determination of damages in this case. The difference in our damages opinions is principally attributable to sharp differences regarding certain assumptions relating to key facts and methodological approach that are fundamental to the determination of the reasonable royalty damages in this case.
9. The “**Background**” section of the Jarosz Report demonstrates the limited and superficial extent of Mr. Jarosz’ investigation in this case. In my opinion, because Mr. Jarosz did not consider all the relevant evidence: a) he failed to follow his own published methodology, b) his work and analysis is deficient, and c) his conclusions are neither “reliable,” “rigorous,” nor “robust.”
10. The “**Lawton Report**” section of the Jarosz Report demonstrates that Mr. Jarosz made extensive use of “Straw Man Fallacy” in his attempts to rebut my analysis and opinions. Because Mr. Jarosz assumes that the claimed invention of the ’988 Patent has little, if any, value, and he does not address my real opinions, his criticisms do not undermine my analysis, conclusions, and

⁴ Jarosz Report, ¶¶ 4-6 (pp. 1-3).

⁵ Jarosz Report, ¶¶ 12-81 (pp. 4-31).

⁶ Jarosz Report, ¶¶ 82-100 (pp. 31-39).

⁷ Jarosz Report, ¶¶ 101-238 (pp. 39-105).

⁸ Jarosz Report, ¶¶ 239-381 (pp. 106-154).

opinions. In addition, Mr. Jarosz attempts to inject information into this case that in some instances he knows is false and irrelevant, and in other instances he knows is false and misleading, or is unsupported, confusing, and misleading.

11. The “**Jarosz Analysis**” section of the Jarosz Report is based on his assumption that the claimed invention of the ’988 Patent has little, if any, value, and the alleged “administrative difficulties of using running royalty licenses”⁹ which he claims augurs for a lump-sum payment. If the fact finder determines that his contentions are either unsupported and/or wrong, then Mr. Jarosz’ opinion is irrelevant. In addition, in this case, Mr. Jarosz attempts to “recycle” his opinion in the *Siemens AG v. Seagate Technology, LLC* litigation which was focused on LMR *read* heads in the HDD’s market transition to GMR during the period 1997 to 1999—years before the October 2006 hypothetical negotiation in this case focused on PMR *write* heads, and ignores the high stakes and economic significance of PMR and the HDD market’s transition to PMR. In short, Mr. Jarosz’ opinion in this case is a Seagate-centric analysis that largely ignores the circumstances of *this case*, and does not substantively address either the Income Approach (*i.e.*, Cost Savings) or Cost Approach. Mr. Jarosz’ application of the Market Approach is based on the alleged comparables that he relied on in the *Siemens AG v. Seagate Technology LLC* case, which I addressed in detail in my Initial Report. The Jarosz Report presents little, if any, new information and data.

⁹ See, e.g., Jarosz Report, ¶ 133 (p. 55) (“Further, the administrative burden and difficulty associated with tracking individual wafers through Seagate’s internal supply chain would make a running royalty license extremely difficult to implement and police.”), ¶ 138 (p. 57) (“Given the administrative burden (and potential impossibility) of tracking heads that would be relevant to the license to the ’988 Patent, the evidence, as discussed in more detail below, suggests that the appropriate form of the license is an upfront, lump-sum royalty payment for a non-exclusive license to the ’988 Patent.”), ¶ 255 (p. 111) (“[G]iven that Seagate does not have a system through which it tracks individual components through the supply chain, it would be administratively burdensome (if not impossible), both *ex ante* and *ex post*, to determine the number of individual HGAs or HDDs that (1) contain a write head or wafer manufactured in the U.S. and allegedly embodies the ’988 Patent, and/or (2) was ultimately destined for sale to U.S. (or a U.S.-based OEM).”), ¶ 367 (pp. 148-149) (“[T]he difficulty in, and lack of an available system for, tracking subcomponents, such as wafer level sliders that allegedly infringe on the ’988 Patent, through Seagate’s multifaceted supply chain; ...”).

III. DIFFERENCES IN DAMAGES OPINIONS

12. There are significant differences between my damages opinion and the basis of my opinions and Mr. Jarosz’ damages opinion and the basis for his opinions. Mr. Jarosz has opined that he agrees with my opinions regarding certain key facts which are fundamental to the determination of damages in this case. The difference in our damages opinions is principally attributable to sharp differences regarding certain assumptions relating to key facts and methodological approach that are fundamental to the determination of the reasonable royalty damages in this case.

A. Areas of Agreement

13. Mr. Jarosz has opined that he agrees with my opinions regarding certain key facts which are fundamental to the determination of damages in this case, namely:
- a) **Basis for Measuring LMS’s Damages:** Mr. Jarosz stated: “Ms. Lawton and I agree that reasonable royalty damages would serve as the appropriate basis for estimating the economic harm to LMS, should the ’988 Patent be found to be valid and infringed.”¹⁰
 - b) **Date of the Hypothetical Negotiation:** Mr. Jarosz stated: “Ms. Lawton and I agree that the date of the hypothetical negotiation, therefore, would have been in **October 2006**.”¹¹
 - c) **Parties to the Hypothetical Negotiation:** Mr. Jarosz stated: “Ms. Lawton and I agree that the hypothetical negotiation would have occurred between **LS and Seagate**.”¹² “Ms. Lawton and I are in agreement that LMS and Seagate are not competitors.”¹³
 - d) **Damages Period:** Mr. Jarosz stated: “Ms. Lawton and I also agree that, ..., the appropriate damages period would not begin until April 29, 2010, at the earliest.”¹⁴
 - e) **Accused Products Units (Royalty Base):** Mr. Jarosz stated: [REDACTED]

[REDACTED]¹⁶ There are minor differences in the volume of Accused Products, as shown in **Table 3.1**, below.

¹⁰ Jarosz Report, ¶ 85 (pp. 32-33).

¹¹ Jarosz Report, ¶ 97 (p. 38). *Citing* Lawton Report, ¶ 1057.

¹² Jarosz Report, ¶ 100 (p. 39). *Citing* Lawton Report, ¶ 1058.

¹³ Jarosz Report, ¶ 345 (p. 143). *Citing* Lawton Report, ¶ 71.

¹⁴ Jarosz Report, ¶ 98 (p. 39).

¹⁵ Jarosz Tab 5.A at [12][I].

¹⁶ Jarosz Report, ¶ 81 (p. 31). *Citing* Jarosz Tab 5.A at [6][I] and [12][I].

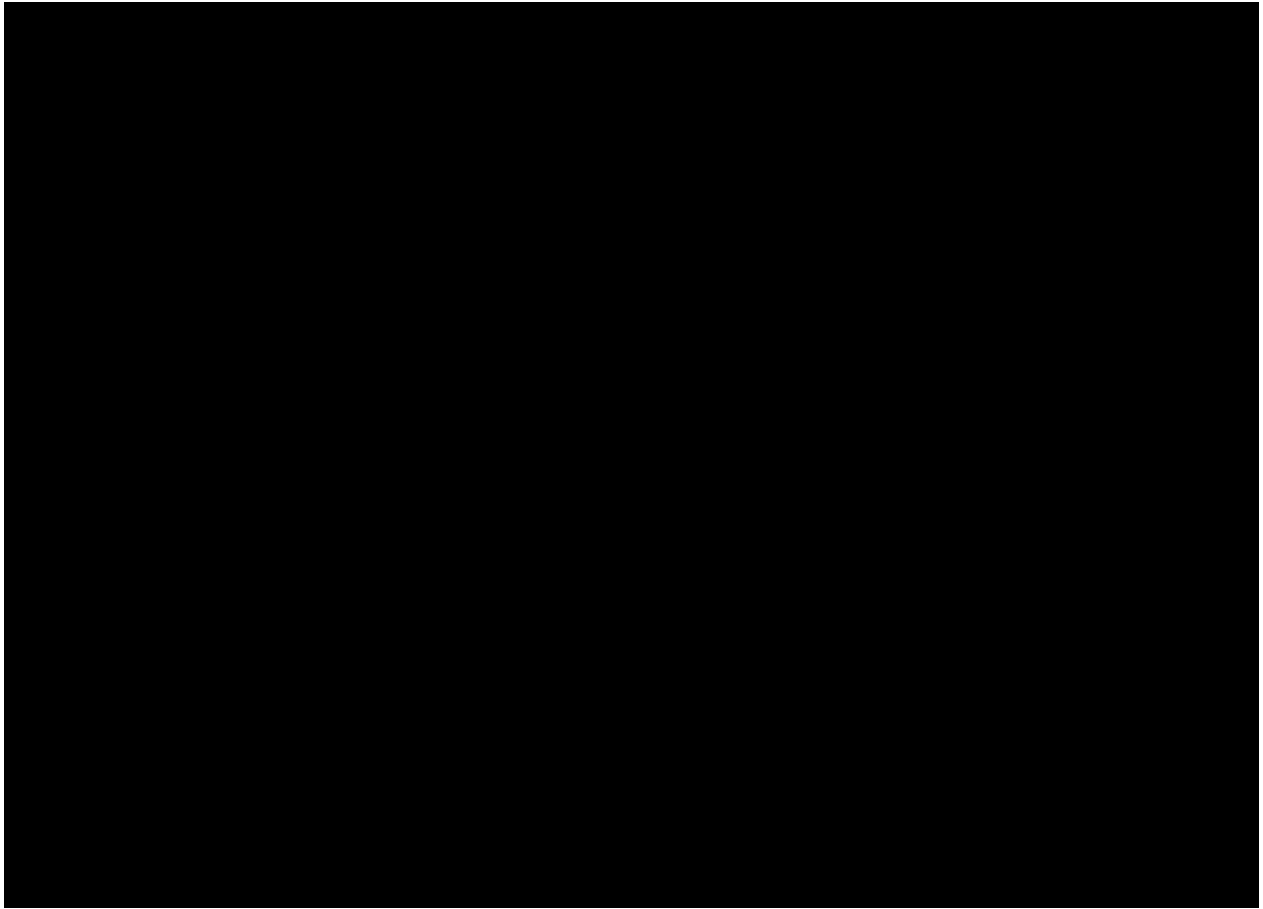


TABLE 3.1

14. In view of Mr. Jarosz’ agreement on the foregoing matters, the difference in our damages opinions is principally attributable to sharp differences regarding certain assumptions relating to key facts and methodological approach that are fundamental to the determination of the reasonable royalty damages in this case.

B. Areas of Disagreement – Assumptions Regarding Key Facts

15. It is axiomatic that patent damages are proportional to the value of the patent(s) that are infringed. As Judge Posner explained in 2012, “if there are no big benefits from infringing, there would be no big license fee for being allowed to continue to use the patents infringed on.”¹⁷ The corollary is: “if there *are* big benefits from infringing, there *could be* a big license fee for being allowed to continue to use the patents infringed on.”

¹⁷ *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901, 917 (N.D. Ill. 2012), *aff’d in part, rev’d in part and remanded*, 757 F.3d 1286 (Fed. Cir. 2014).

16. In this case, Mr. Jarosz assumes (based on Dr. Fullerton) that the benefits associated with the use of the '988 Patent are ***“de minimis at best.”*** As such, it is not surprising that Mr. Jarosz concludes that the reasonable royalty that he claims is adequate to compensate LMS for Seagate’s alleged infringement is relatively nominal, in the:

[R]ange from \$3 million to \$8 million, and are certainly no greater than \$10 million. And the \$3 million may, in fact, be too high in light of the terms and significance of the Julich license.¹⁸

17. I understand that a damages expert is required to undertake “a responsible inquiry.”¹⁹ As Judge Posner explained, “if an expert witness fails to conduct a responsible inquiry that would have been feasible to conduct, his failure cannot be excused by reference to the principle that speculation is permitted in the calculation of damages; that permission presupposes the exhaustion of feasible means of dispelling uncertainty.”²⁰ As I will explain in detail in this section and later in this Reply Report, Mr. Jarosz’ investigation was limited, superficial and ignores key documents and information.

18. In summary, our areas of disagreement as it pertains to certain assumptions regarding key facts include the following:

1. *Technical Advantages of the Claimed Invention of the '988 Patent*

19. My Initial Report outlined in detail the Economic Advantages of the '988 Patent.²¹ LMS contends that the '988 Patent ***“solved the ‘stronger write field’ problem,”***²² and “enables [the use of PMR in] modern disk drives.”²³ Dr. Lambeth’s '988 Patent was a ***“major breakthrough,”***²⁴ the '988 Patent issued “at the time that the HDD industry was transitioning from LMR to PMR, which Seagate spokesman Michael Hull described as ***“the first major upgrade in recording data on***

¹⁸ Jarosz Report, ¶ 6 (p. 3).

¹⁹ *Apple, Inc. v. Motorola, Inc.*, No. 1:11-CV-08540, 2012 WL 1959560, at *5 (N.D. Ill. May 22, 2012), *rev'd*, 757 F.3d 1286 (Fed. Cir. 2014).

²⁰ *Apple, Inc. v. Motorola, Inc.*, No. 1:11-CV-08540, 2012 WL 1959560, at *5 (N.D. Ill. May 22, 2012), *rev'd*, 757 F.3d 1286 (Fed. Cir. 2014).

²¹ Lawton Report, ¶¶ 152-195 (pp. 77-100).

²² Lawton Report, ¶ 165 (p. 85).

²³ Lawton Report, ¶ 152 (p. 77).

²⁴ Lawton Report, ¶ 152 (p. 77).

disk drives since the first drive was created by IBM 50 years ago.”²⁵ LMS’s complaint describes the advantages of the ’988 Patent as follows:

This new magnetic [material] structure allowed Hard Disk Drive Devices with greater capacity than before, but without an increase in their physical size. Thus, this structure was and continues to be instrumental to the ever-increasing miniaturization of computers and concomitant increase of data storage capacity.²⁶

20. Furthermore, I noted that Seagate acknowledged in contemporaneously prepared documents that “[t]he claimed advantages of the ’988 Patent, increased storage capacity and reduced size, are extraordinarily valuable.”²⁷
21. In contrast, Mr. Jarosz presents a series of alternative alleged “facts” including the following:
 - a) **Claim that the ’988 Patent Allegedly “does not teach or otherwise enable PMR technology”**
22. I relied on Dr. Coffey’s opinion and stated that “the claimed invention of the ’988 Patent was critical to enabling Seagate, Western Digital and HGST to commercialize HDDs with PMR functionality. In particular, I understand that the claimed invention of the ’988 Patent was critical to enabling Seagate, Western Digital and HGST to commercialize HDDs with write heads capable of writing on media with greater coercivity which enabled higher areal density.”²⁸
23. Seagate’s expert, Dr. Fullerton, disagrees with Dr. Coffey’s opinion. Dr. Fullerton asserts that “the claimed invention of the ’988 Patent is not directed to an essential feature of PMR.”²⁹ According to Dr. Fullerton, [REDACTED]
[REDACTED]
[REDACTED]³⁰
24. Mr. Jarosz asserts (based on Dr. Fullerton’s opinion) that “the ’988 Patent does not teach or otherwise enable PMR technology.”³¹ This is a key assumption regarding an important fact. Mr. Jarosz’ assumption (and Dr. Fullerton’s opinion) is directly contradicted by Dr. Kryder’s **August**

²⁵ Lawton Report, ¶ 151 (p. 76).

²⁶ Lawton Report, ¶ 154 (p. 78).

²⁷ Lawton Report, ¶ 155 (pp. 78).

²⁸ Lawton Report, ¶ 151 (p. 76).

²⁹ Jarosz Report, ¶ 170 (p. 72) (*citing* conversation with Fullerton).

³⁰ Jarosz Report, ¶ 170 (p. 72) (*citing* conversation with Fullerton).

³¹ Jarosz Report, ¶ 356 (p. 146) (*Georgia-Pacific* Factor Nos. 9 and 10).

2000 Q&A posted on Seagate’s website³²—a document that I cited³³ and that Mr. Jarosz apparently did not review and/or rely upon.³⁴

25. According to Dr. Kryder, Seagate’s Vice President of Research, as of August 2000 (a few months *after* Dr. Lambeth conceived the claimed invention of the ’988 Patent), the PMR media problem had already been solved, but the write head problem had not—and would require the claimed invention of the ’988 Patent, namely, “higher moment magnetic materials.” In August 2000, Dr. Kryder stated: **“We can make much more thermally stable media than we have today by increasing the coercivity. The problem is, we can’t write on the media if the coercivity is too high, because, the heads can’t produce sufficiently high magnetic fields to overcome the coercivity. That, in turn, is because we don’t have sufficiently high-moment magnetic materials for the write heads. So producing higher moment magnetic materials is one of our goals. That’s going to be a challenge because there are no known alloy materials with a substantially higher magnetic moment. The world has pretty well looked at all the potential magnetic materials out there in alloy form ...,”**³⁵ as shown in Figure 3.2, below:

³² “Questions and Answers with Mark Kryder,” *Seagate*, August 18, 2000, *available at* <https://web.archive.org/web/20000818005433/http://www.seagate.com:80/newsinfo/technology/research/D4b4.html> (earliest archive capture).

³³ Lawton Report, ¶ 198 (pp. 101-102).

³⁴ Jarosz Tab 2 – Documents Reviewed and/or Relied Upon.

³⁵ Lawton Report, ¶198 (pp. 101-102) (*citing* “Questions and Answers with Mark Kryder,” *Seagate*, August 18, 2000, *available at* <https://web.archive.org/web/20000818005433/http://www.seagate.com:80/newsinfo/technology/research/D4b4.html> (earliest archive capture) (emphasis added)).



...

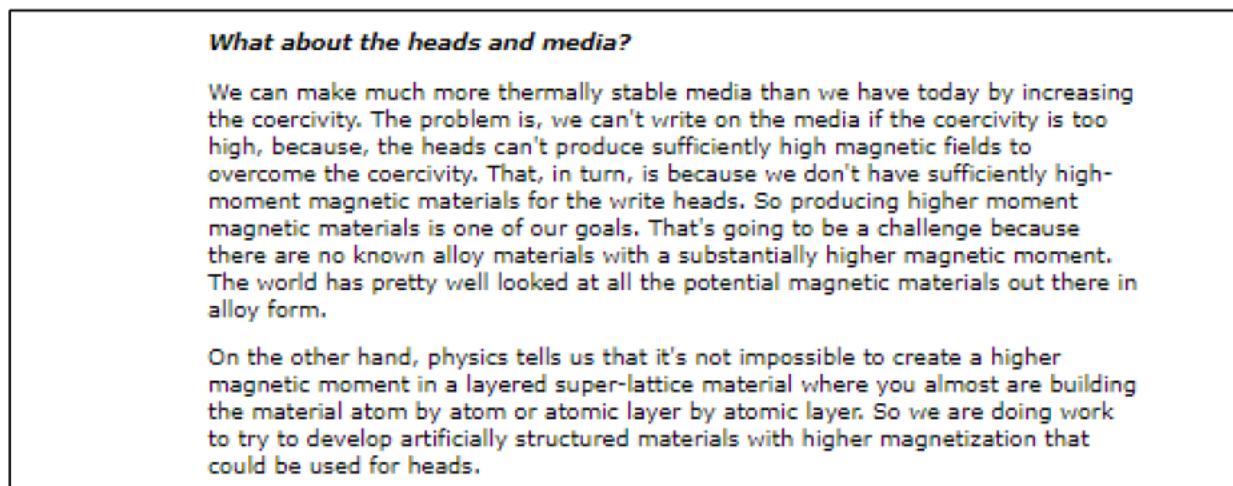


FIGURE 3.2

26. Dr. Lambeth had conceived of the claimed invention of the '988 Patent several months before the date of Dr. Kryder's Q&A. According to Dr. Lambeth, the conception date of the '988 Patent was **early-spring 2000**, and the reduction to practice was in September 2000.³⁶ Dr. Lambeth's patent

³⁶ Lawton Report, ¶ 127 (p. 64).

application was first published on **March 25, 2004**.³⁷ As noted in my Initial Report,³⁸ Seagate's Recording Heads Operation "had a practice of doing searches to make sure, ... that [it] knew whether [it] had the ability to go patent [its] work and also to try to make sure that [it] wasn't infringing on anyone else's intellectual property;"³⁹ "the engineering team that developed the head would be involved in that practice."⁴⁰ "The practice was communicated orally on an informal basis one on one or in small groups."⁴¹ ... It was sort of an ongoing process that they knew we did all the time and that they did."⁴²

27. By August 2000, , as Dr. Kryder acknowledged in the foregoing contemporaneous Q&A, Seagate still had not solved the PMR "stronger write field" problem. Dr. Kryder, however, does not mention either the write head "shape or stress"—which Dr. Fullerton asserts would allegedly "dwarf" the contribution of the claimed invention of the '988 Patent.⁴³
28. Later contemporaneous evidence further supports the contribution of stronger write fields to PMR. For example, according to Seagate's Dr. Kryder, as of 2001, additional work on PMR heads was

³⁷ See, e.g., U.S. Patent No. 7,128,988, *PatentBuddy*, available at <http://www.patentbuddy.com/Patent/US-7128988-B2?ft=true>.

³⁸ Lawton Report, ¶ 611, p. 371.

³⁹ *Siemens AG v. Seagate Technology, LLC*, Case No. 8:06-cv-00788-JVS-AN (C.D. Cal.), Dkt. 780 (Trial Transcript, November 21, 2008 (Trial Day 6) – Ken Allen (Seagate), Direct), 65:25-66:3.

⁴⁰ *Siemens AG v. Seagate Technology, LLC*, Case No. 8:06-cv-00788-JVS-AN (C.D. Cal.), Dkt. 780 (Trial Transcript, November 21, 2008 (Trial Day 6) – Ken Allen (Seagate), Direct), 66:18-66:20.

⁴¹ *Siemens AG v. Seagate Technology, LLC*, Case No. 8:06-cv-00788-JVS-AN (C.D. Cal.), Dkt. 762 (Trial Transcript, December 2, 2008 (Trial Day 7) – Edward Murdock (Seagate), Direct), 30:23-31:3.

⁴² *Siemens AG v. Seagate Technology, LLC*, Case No. 8:06-cv-00788-JVS-AN (C.D. Cal.), Dkt. 762 (Trial Transcript, December 2, 2008 (Trial Day 7) – Edward Murdock (Seagate), Direct), 32:12-32:13. See also 36:9-36:11 ("A. Brenda Everitt, Tony Mack, all the people in my department, all the engineers routinely did it [reviewed patents and brought to Dr. Murdock's attention any patents that they had found that they thought would possibly be a problem]. We talked about it often."). 36:14-36:18 ("A. We talked about the procedure often. ... A. Sining Mao searched for patents all the time."). 37:2-27:8 ("Q. So how can you tell us that they followed the practice with respect to looking for patents covering AAF if you don't know if they did it? A. Because I told them to follow it. They frequently brought other patents to my attention – well, maybe not frequently but from time to time. So the engineers were responsible people, and they did their jobs, you know, so –").

⁴³ Jarosz Report, ¶ 363 (p. 147) ("According to Dr. Fullerton, 'the purported invention of the '988 Patent at most had an incremental effect in improving uniaxial anisotropy in write heads' – an effect which he later characterized as "*de minimis* at best.' In contrast, 'the contribution to uniaxial anisotropy from other sources in the write head—such as from shape and stress—would dwarf those of any alleged contributions from having a symmetry broken magnetic layer in the write head.'" Citing Fullerton Report, ¶¶ 887, 874).

still required.⁴⁴ “In a 2007 paper, a group of Seagate engineers stated: ‘Advanced perpendicular writers continue to demand maximum write fields.’”⁴⁵ In an April 2017 interview (after the lawsuit was filed), “Dr. Kryder described the technical problem of developing a write pole for use in PMR [as] a ‘tough technical problem.’ Dr. Kryder stated: ‘And I mean, yeah, there were challenges. No question about it. The technical problems, I mean, you know, ‘how do you build a near-field head?’ You need something drastically more efficient than what we had, and those are tough technical issues.’”⁴⁶

29. Furthermore, Mr. Jarosz acknowledged that “Seagate’s [accused] HDD products have been very successful, although the success has not been attributed **solely** to the coverage of the ’988 Patent as opposed to the multitude of other technologies embodied in Seagate’s HDDs.”⁴⁷

b) **Claim that the Advantages of the ’988 Patent are Allegedly “*de minimis* at best”**

30. Building on Dr. Fullerton’s contention that the ’988 Patent allegedly “does not teach PMR technology, nor is it even essential to PMR technology,” Mr. Jarosz asserts (based on Dr. Fullerton’s opinion) that the advantages of the ’988 Patent are “***de minimis* at best.**” Mr. Jarosz’ assertion is based on a July 11, 2016 conversation—five days before his report was filed—with Dr. Eric Fullerton and Dr. Fullerton’s expert report which Mr. Jarosz summarized as follows:

I understand that the ’988 Patent does not teach PMR technology, nor is it even essential to PMR technology; it is one way to slightly fine tune one class of materials that can be used in accomplishing PMR. According to Dr. Fullerton, ... “the purported invention of the ’988 Patent at most had an incremental effect in improving uniaxial anisotropy in write heads,” and “any such improvement would be *de minimis* at best, and uniaxial anisotropy could be derived from multiple other prior art sources, including from shape, pair ordering, and strain.”⁴⁸

⁴⁴ Lawton Report, ¶ 200 (pp. 102-103) (citing “Oral History of Mark Kryder (Interviewed by Chris Bajorek)” *Computer History Museum*, April 14, 2017, pp. 22-23 of 51, available at <http://archive.computerhistory.org/resources/access/text/2017/12/102738245-05-01-acc.pdf>).

⁴⁵ Lawton Report, ¶ 201 (p. 103) (citing Mark Kief, Venkat Inturi, Mourad Benakli, Ibro Tabakovic, Ming Sun, Olle Heinonen, Steve Reimer, Vladyslav Vas’ko, “High Magnetic Saturation Poles for Advanced Perpendicular Writers,” *Digest of the 18th Magnetic Recording Conference TMRC – 2007*, May 21 – 23, 2007, p. 28, available at http://people.ece.umn.edu/~MINT/TMRC2007/program/tmrc2007_digest_final.pdf).

⁴⁶ Lawton Report, ¶ 126 (p. 64) (citing “Oral History of Mark Kryder (Interviewed by Chris Bajorek)” *Computer History Museum*, April 14, 2017, p. 37 of 51, available at <http://archive.computerhistory.org/resources/access/text/2017/12/102738245-05-01-acc.pdf>).

⁴⁷ Jarosz Report, ¶ 354 (p. 145) (*Georgia-Pacific* Factor No. 8) (emphasis added).

⁴⁸ Jarosz Report, ¶ 152 (pp. 64-65). See also ¶356 (p. 146) (*Georgia-Pacific* Factor Nos. 9 and 10: “It is my understanding that the ’988 Patent does not teach or otherwise enable PMR technology. According to Dr. Fullerton, even assuming ‘that the invention claimed in the ’988 Patent would ‘contribute’ to uniaxial anisotropy ... any such

The '988 Patent does not solve issues associated with “erase after write” (or “EAW”), whereby data are unintentionally erased after being recorded on a disk. In fact, many other technologies can be and have been used to address EAW.⁴⁹

31. As noted above, Dr. Fullerton disagrees with Dr. Coffey’s opinion that the '988 Patent was critical to enabling Seagate, Western Digital and HGST to commercialize HDDs with PMR functionality.⁵⁰

c) **Claim Regarding the Number of Manufacturing Sequences Related to the '988 Patent**

32. Mr. Jarosz attempted to further marginalize the claimed invention of the '988 Patent by citing to Matthew Hadley, a Senior Staff Engineer at Seagate, regarding the number of manufacturing sequences:



33. Mr. Jarosz, however, does not explain why the number of “manufacturing sequences” is a relevant and reliable indicator of the value of the claimed invention of the '988 Patent. “The benefit of the patent lies in the idea, not the small [number of manufacturing sequences].”⁵² Furthermore, A

contribution would be negligible at best—on the order of a few oersteds—and certainly in no way ‘critical’ to having a viable write head for PMR media.” *Citing* Fullerton Report, ¶ 874). *See also* ¶ 363 (p. 147) (“According to Dr. Fullerton, ‘the purported invention of the '988 Patent at most had an incremental effect in improving uniaxial anisotropy in write heads’ – an effect which he later characterized as “*de minimis* at best.’ In contrast, ‘the contribution to uniaxial anisotropy from other sources in the write head—such as from shape and stress—would dwarf those of any alleged contributions from having a symmetry broken magnetic layer in the write head.’” *Citing* Fullerton Report, ¶¶ 887, 874).

⁴⁹ Jarosz Report, ¶ 153 (p. 65).

⁵⁰ Lawton Report, ¶ 151 (p. 76).

⁵¹ Jarosz Report, ¶ 151 (p. 64).

⁵² *See, e.g., Commonwealth Sci. & Indus. Research Organisation v. Cisco Systems, Inc. (CSIRO I)*, No. 6:11-CV-343, 2014 WL 3805817, at *11 (E.D. Tex. July 23, 2014), *vacated*, 809 F.3d 1295 (2015), *cert. denied*, 136 S. Ct. 2530 (2016) (“The benefit of the patent lies in the idea, not in the small amount of silicon that happens to be where that idea is physically implemented. Compounding this problem is the depression of chip prices in the damages period resulting from rampant infringement which occurred in the wireless industry. ... Basing a royalty solely on chip price is like valuing a copyrighted book based only on the costs of the binding, paper, and ink needed to

count of “manufacturing sequences” is analogous to the number of lines of code in a software program. It is widely recognized that such measures are generally not reliable indicators of value.⁵³

2. The '988 Patent's “Footprint in the Marketplace”

34. A damages analysis must be based on “sound economic and factual predicates,”⁵⁴ that “carefully tie[s] proof of damages to the claimed invention’s footprint in the market place.”⁵⁵ In a 2012 interview, then Chief Judge Rader stated: “I think going all the way back to *Rite-Hite*, we started looking at it in the early '90s, and I think we’ve given a pretty constant drumbeat on the need for sound economic evidence and a focus on the scope of the claimed invention.”⁵⁶
35. While Mr. Jarosz acknowledges in passing that [REDACTED]

[REDACTED]⁵⁷ Mr. Jarosz fails to address the upshot of this fact in his work in this case. Instead, Mr. Jarosz simply asserts that the benefit of the claimed invention of the '988 Patent is “*de minimis* at best.”

a) “HDD Value Drivers”

36. Mr. Jarosz’ “Footprint of the '988 Patent – HDD Value Drivers” discussion focuses almost exclusively on GMR (*read* head technology in LMR)—even though the relevant technology in this case is the HDD market transition to the new PMR (*write* head technology),⁵⁸ which was **“the first major upgrade in recording data on disk drives since the first drive was created by IBM**

actually produce the physical product. While such a calculation captures the cost of the physical product, it provides no indication of its actual value.”).

⁵³ See, e.g., *Lucent Technologies, Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1332-33 (Fed. Cir. 2015) (“As explained by Microsoft’s expert Mr. Kennedy, Outlook consists of millions of lines of code, only a tiny fraction of which encodes the date-picker feature. Although the weighing of [*Georgia-Pacific*] Factor 13 cannot be reduced to a mere counting of lines of code, ...”). *Finjan, Inc. v. Blue Coat Systems, Inc.*, (Case No. 13-cv-03999-BLF, N.D. Cal., Dkt. No. 378, July 14, 2015, at p. 8). (“In any case, although the Federal Circuit has indicated that the portion of an accused product’s realizable profit attributable to the patentee’s technology, ‘cannot be reduced to a mere counting of lines of code,’ ...”).

⁵⁴ *Riles v. Shell Exploration & Prod. Co.*, 298 F.3d 1302, 1311 (Fed. Cir. 2002).

⁵⁵ *ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d 860, 869 (Fed. Cir. 2010).

⁵⁶ David A. Haas, John R. Bone, and David N. Paris, “View from the Federal Circuit: An Interview with Chief Judge Randall R. Rader,” *Stout Risius Ross, Inc.*, July 9, 2012, available at <http://www.srr.com/article/view-federal-circuit-interview-chief-judge-randall-r-rader>.

⁵⁷ Jarosz Report, ¶ 81 (p. 31). Citing Jarosz Tab 5.A at [6][I] and [12][I].

⁵⁸ Jarosz Report, ¶¶ 142-148 (pp. 59-63).

50 years ago.”⁵⁹ Instead of directly addressing the high-stakes and highly consequential HDD market transition to PMR—and the ’988 Patent’s contribution to it—Mr. Jarosz focuses on his *alternative narrative* and the much earlier GMR *read* head transition that began a decade earlier (with IBM in 1997) which he alleges “provides guidance here.”⁶⁰ Mr. Jarosz failure to address the HDD market transition to PMR is a glaring deficiency in his work.

b) **“DSSC Technology”**

37. Mr. Jarosz’ “Footprint of the ’988 Patent – DSSC Technology”⁶¹ focuses on Carnegie Mellon University’s (“CMU”) research partnership with its industrial partners—the DSSC, or Data Storage Systems Center. LMS is not part of the DSSC, and therefore the CMU research partner licenses and related fees and commitments provides no insight regarding the LMS-Seagate Hypothetical Negotiation. Mr. Jarosz claims (based on Dr. Fullerton) that certain CMU patents “are technologically comparable to or ‘offer[] a significantly greater improvement than the ’988 Patent.”⁶² Mr. Jarosz, however, offers no analysis of the economic benefits of the CMU patents compared the ’988 Patent.
38. While the CMU (DSSC) patents do not appear to factor into Mr. Jarosz’ reasonable royalty opinion,⁶³ the DSSC Associate membership agreements are not comparable and do not provide insight regarding the reasonable royalty adequate to compensate LMS for Seagate’s alleged infringement of the ’988 Patent.⁶⁴ the Federal Circuit has distinguished the CMU (DSSC) license agreements with its industrial research partners stating:

CMU explained to the jury that the licensees in each of those instances had longstanding, collaborative research partnerships with CMU and had invested

⁵⁹ Lawton Report, ¶ 151 (p. 76). *Citing* Mac Thoo, “Seagate introduces Monster Hard Disk,” *Hard Disk Trend Blogspot*, April 27, 2006, *available at* http://hard-disk-trend.blogspot.com/2006_04_01_archive.html. *See also* Yoichiro Tanaka, “Perpendicular Recording Technology: From Research to Commercialization,” *Proceedings of the IEEE*, November 2008, *available at* http://ieeexplore.ieee.org/iee_pilot/articles/96jproc11/jproc-YTanaka-2004309/article.html#authors (“The transition from longitudinal recording to perpendicular recording is the first major recording scheme evolution in the history of the hard disk drive industry.”).

⁶⁰ Jarosz Report, ¶¶ 154-159 (p. 65-67).

⁶¹ Jarosz Report, ¶ 148 (pp. 62-63).

⁶² Jarosz Report, ¶ 159 (p. 67).

⁶³ Jarosz Report, ¶ 366-372 (pp. 148-152).

⁶⁴ *See, e.g., Carnegie Mellon University v. Marvell Technology Group, Ltd, et al.*, Case No. 2:09-cv-00290-NBF (W.D. Pa.), Trial Tr. December 5, 2012, 24:9-87:12 (Dr. Kryder). *See, e.g., Carnegie Mellon University v. Marvell Technology Group, Ltd, et al.*, Case No. 2:09-cv-00290-NBF (W.D. Pa.), Trial Tr. December 5, 2012, 122:25-124:20 (Dr. Wooldridge, Cross).

substantial sums over the years in CMU's hard-disk-drive focused research. Significantly, those licenses were granted before CMU ever developed the patentable technology; the licensees gave CMU money with no guarantee that any usable technology would result, sharing the costs of uncertain research in the hope of a future potential benefit.⁶⁵

3. Circumstances in October 2006 at the Time of the Hypothetical Negotiation

39. “The key element in setting a reasonable royalty is the necessity for return to the date when infringement began.”⁶⁶ “The hypothetical negotiation must be scheduled as of *the time infringement began*. *Uniloc*, 632 F.3d at 1312.”⁶⁷ “[T]he hypothetical negotiation framework, ... seeks to discern the value of the patented technology to the parties in the marketplace when infringement began.”⁶⁸ “[T]he basic question posed in a hypothetical negotiation is: if, on the eve of infringement, a willing licensor and licensee had entered into an agreement instead of allowing infringement of the patent to take place, what would that agreement be? ... Were we to permit a later notice date to serve as the hypothetical negotiation date, the damages analysis would be skewed because, as a legal construct, we seek to pin down how the prospective infringement might have been avoided via an out-of-court business solution.”⁶⁹ “[T]he hypothetical negotiation date may nevertheless be properly set before marking or notice begins.”⁷⁰ “[T]he six-year limitation on recovery of past damages ... does not preclude the hypothetical negotiation date from taking place on the date infringement began, even if damages cannot be collected until some time later. *See Wang Labs., Inc. v. Toshiba Corp.*, 993 F.2d 858, 870 (Fed. Cir. 1993).”⁷¹
40. As one author stated: “An expert opinion is at best speculation if it fails to analyze the particular circumstances that would confront the parties to the hypothetical negotiation that is contemplated for purposes of determining a reasonable royalty in the context of litigation. In short, the

⁶⁵ *Carnegie Mellon University v. Marvell Technology Group, Ltd, et al.*, 807 F.3d 1283, 1309 (Fed. Cir. 2015).

⁶⁶ *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 76 (Fed. Cir. 2012) (quoting *Hanson v. Alpine Valley Ski Area, Inc.*, 718 F.2d 1075, 1079 (Fed. Cir. 1983)).

⁶⁷ *Oracle America, Inc. v. Google, Inc.*, 798 F.Supp. 2d 1111, 1116 (N.D. Cal. 2011) (emphasis in original). *See also LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 76 (Fed. Cir. 2012) (“[T]he hypothetical negotiation must focus on the ‘date when the infringement began’” *Hanson*, 718 F.2d at 1079, ...”).

⁶⁸ *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 76 (Fed. Cir. 2012).

⁶⁹ *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 76 (Fed. Cir. 2012).

⁷⁰ *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 75 (Fed. Cir. 2012).

⁷¹ *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 75 (Fed. Cir. 2012).

determination of a reasonable royalty is fundamentally an economic analysis that involves an examination of the evidence and quantification of each party's gains and losses due to the hypothetical license. No shortcuts can substitute for a careful analysis."⁷²

41. My Initial Report addressed in detail the industry circumstances at the time of the October 2006 hypothetical negotiation,⁷³ as well as Seagate's circumstances,⁷⁴ LMS's circumstances, the importance of and strategic opportunity attendant to the introduction of PMR,⁷⁵ and the issue of Alternatives.⁷⁶ For example, I noted that in "December 2006, Seagate's Dave Wickersham stated that LMR was **"really just out of gas."**⁷⁷ "By 2007, PMR technology was critical to fulfilling the demand for high-capacity drives."⁷⁸ "Perpendicular recording was needed to address one of the 'key challenges' facing the HDD industry's current recording technology, LMR—overcoming the constraints imposed by the superparamagnetic effect, which HGST described as posing a 'significant challenge.'"⁷⁹ Seagate's Mr. Pechman testified that "going to perpendicular recording is – was helpful in getting to higher recording densities"⁸⁰ (*i.e.*, increased areal density).
42. In contrast, Mr. Jarosz' work and opinions are based on a variety of "shortcuts." For example, he spent little, if any, time addressing the circumstances—or *the stakes*—and Seagate's business strategy to exploit and leverage the HDD market transition to PMR in an effort to achieve a business advantage at the time of the hypothetical negotiation in October 2006 including the importance of time-to-market. Mr. Jarosz does not address—*nor does he dispute*—the facts that I rely upon including those that pertain to the Seagate's circumstances in October 2006, and the importance of and strategic opportunity attendant to the introduction of PMR. For example, according to Dr. Kryder, "Seagate **'bet the business'** on perpendicular, and Seagate's bet **'paid**

⁷² Christine Meyer, Bryan Ray, "A Critique of Noneconomic Methods of Reasonable Royalty Calculation," in Gregory K. Leonard, Lauren J. Stiroh, Ed., *Economic Approaches to Intellectual Property Policy, Litigation, and Management*, (White Plains: NY, National Economic Research Associates, Inc., 2005), pp. 83-93, at p. 93.

⁷³ See, e.g., Lawton Report, ¶¶ 124-126 (pp. 58-64).

⁷⁴ Lawton Report, ¶¶ 869-924 (pp. 512-541). See also ¶¶ 526-609 (pp. 312-369).

⁷⁵ Lawton Report, ¶¶ 464-503 (pp. 277-300).

⁷⁶ Lawton Report, ¶¶ 203-204 (pp. 103-104).

⁷⁷ Lawton Report, ¶ 203 (p. 103).

⁷⁸ Lawton Report, ¶ 470 (p. 280).

⁷⁹ Lawton Report, ¶ 469 (p. 279).

⁸⁰ Lawton Report, ¶ 466 (p. 278).

off well' when it was first to market in PMR HDDs.”⁸¹ Mr. Jarosz does not dispute that when Seagate began working on PMR in 1998, it was attempting to **“transform Seagate into a technology powerhouse,”**⁸² which its CTO, Mr. Porter, said was important because, **“This is about survival. This is a survival imperative.”**⁸³ This is because “[i]n the HDD industry, history has shown that ‘one generation of products will wipe out a prior generation, typically in the hands of a different set of innovators.’”⁸⁴ At that time, “Seagate’s CTO, Tom Porter ‘define[d] ‘technology leadership’ in stark terms. It’s areal density ... [and] Seagate ha[dn’t] even been a player.’ Tom Porter stated: ‘If you ask where the leverage is in this business, clearly it’s in improving areal density.’”⁸⁵ ... [I]f you’re not inventing the technology, you’re getting run over by it.”⁸⁶ Furthermore, “Seagate had fallen behind on head design—and Dr. Porter hired 90 new PhD.s, and ‘[m]ost of these new graduates appear[ed] to be aimed at giving Seagate a boost in head design.’”⁸⁷

43. Instead, Mr. Jarosz ignores the circumstances that existed in October 2006 and attempts to build an alternative narrative based on a highly selective and limited number of disjointed facts which confuse and obfuscate the central issues. For example, Mr. Jarosz highlights the following:

- a) **Dr. Fullerton’s opinion that technical advantages of the claimed invention of the ’988 Patent are allegedly “*de minimis* at best.”** Mr. Jarosz repeatedly cites Seagate’s contention that the technical contribution of the claimed invention of the ’988 Patent is “*de minimis* at best” and “dwarfed” by other factors, as I discussed previously.
- b) **Dr. Ross’ opinion that the ’988 Patent is invalid**⁸⁸—notwithstanding the fact that a damages analysis and opinion requires the assumption that the asserted patent is valid and infringed.⁸⁹

⁸¹ Lawton Report, ¶ 872 (p. 513).

⁸² Lawton Report, ¶ 545 (p. 323). *See also* ¶555 (p. 330) (Dr. Kryder, Seagate’s Vice President of Research, stating that Seagate hired him in 1998 “because they realized that they needed to be a technology leader.”).

⁸³ Lawton Report, ¶ 545 (p. 323-324).

⁸⁴ Lawton Report, ¶ 545 (p. 323-324).

⁸⁵ *See also* Lawton Report, ¶166 (p. 54) (“According to Seagate’s Ken Allen, ‘areal density is one very important part of technology leadership.’ ... Improving areal density is clearly high leverage in the HDD industry, meaning that it’s important to Seagate’s success.”)

⁸⁶ Lawton Report, ¶ 544 (pp. 322-323).

⁸⁷ Lawton Report, ¶ 544 (p. 322-323).

⁸⁸ Jarosz Report, ¶ 53 (p. 20).

⁸⁹ *See, e.g.*, Jarosz Report, ¶ 91 (p. 36).

- c) **Seagate’s “product development efforts and innovation** which have contributed to its leadership position in the HDD industry.”⁹⁰
- d) **Other HDD “Technological Innovations” that have increased areal density** including PMRL, AMR, GMR, TMR—and one paragraph dedicated to PMR.⁹¹
- e) **HDD market events post-October 2006, the date of the hypothetical negotiation in this case.** For example, Mr. Jarosz states “[s]ince 2010, HDD shipments globally have been on an almost constant decline.”⁹² Citing 2015, 2016 and 2017 analyst reports Mr. Jarosz states: “[m]any analysts share the view that global HDD sales have been cannibalized by competing storage solutions, such as solid-state storage devices (“SSDs”).⁹³
- f) **The number of “components and subcomponents incorporated in an HDD.”**⁹⁴ Mr. Jarosz claims—without substantive investigation or analysis—that “[t]he hundreds of components to an HDD embody technologies that are covered by thousands of patents.”⁹⁵
- g) **The number of Seagate’s patents.** Mr. Jarosz notes—again without substantive investigation or analysis—that “[f]or HDD *head technology alone*, Seagate currently owns 1,528 U.S. Patents that were filed between 2000 and 2016. Of these, 1,221 are issued and current, while an additional 307 patents have been abandoned, expired, lapsed, or were sold,” based on a July 6, 2018 conversation with Seagate’s Matt Hadley.⁹⁶
- h) **The defendant hot-button issue of “Hold-up.”**⁹⁷ Mr. Jarosz attempts to inject the unsupported (and unsupportable) claim that my damages opinion in this case is based on the “suggest[ion] that LMS would be able to extract a license payment greater than the value of the ’988 Patent due to hold-up and the construct of the hypothetical negotiation in patent litigation.”⁹⁸ Mr. Jarosz again resorts to “Straw Man Fallacy” argument when he claims—*without footnote citation*—that I “opined that the timing of the hypothetical negotiation means that LMS should be able to expropriate rents in excess of the inherent advantages attributable to the use of the patented technology based on the existence of Seagate’s committed investments. ... It is inappropriate to allocate a portion of the value of

⁹⁰ Jarosz Report, ¶ 22 (p. 8). *See also* ¶¶ 23-25 (pp. 8-9).

⁹¹ Jarosz Report, ¶¶ 31-40 (pp. 11-15).

⁹² Jarosz Report, ¶ 43 (p. 16).

⁹³ Jarosz Report, ¶ 44 (pp. 16-17).

⁹⁴ Jarosz Report, ¶¶ 28, 54 (pp. 10, 20).

⁹⁵ Jarosz Report, ¶ 150 (p. 63).

⁹⁶ Jarosz Report, ¶¶ 150-151 (pp. 63-64).

⁹⁷ Jarosz Report, ¶ 94 (pp. 37-38).

⁹⁸ Jarosz Report, ¶ 309 (p. 132).

these investments to the patented technology itself, as Ms. Lawton’s analysis does.”⁹⁹

C. Areas of Disagreement – Methodological Approach

44. There is no dispute that there are three (3) generally accepted methods for patent valuation: the Income Approach, Market Approach, and Cost Approach.¹⁰⁰ There is also no dispute that all three approaches should be considered when determining a reasonable royalty. In fact, Mr. Jarosz and his Analysis Group co-author, Dr. Chapman, stated the following in a Spring 2013 *Stanford Technology Law Review* article:

We propose that the determination of reasonable royalty damages be based on a direct and objective assessment of a patent’s **(1) incremental benefits, (2) licensing comparables, and (3) design-around costs**. We propose a balancing and weighing of the results of these different approaches without the introduction of artificial bargaining drama, guided by the objective of ensuring fair patent holder compensation in light of the infringement at issue.¹⁰¹

...

[O]ur approach to the determination of reasonable royalty damages calls for the systematic consideration of *all available evidence* from three different perspectives. The first perspective considers the incremental benefits generated by the infringement relative to the benefits that would be available if the infringer had used the noninfringing, next best alternative. This perspective is referred to as an Incremental Benefits analysis. The second perspective considers the amounts that have been paid in licenses that are similar to the hypothetical license for the use of technologies that are similar to the patented technology and for uses that are similar to the infringing use made of the patented technology by the infringer. This perspective is referred to as a Licensing Comparables analysis. The third perspective considers the costs the infringer would have incurred if it had sought to develop and implement a new noninfringing alternative in lieu of practicing the infringed patented technology after the infringer learned the patent in question was valid, enforceable, and infringed. Individually, each of these perspectives provides insights into the magnitude and nature of the benefits associated with and generated by the infringement of the patented technology. When considered together, these perspectives can provide particularly useful guidance for the ultimate issue in a reasonable royalty determination—namely, the amount of compensation that is needed to adequately compensate the patent holder for an infringement. Moreover, the consideration of all available relevant evidence from multiple and

⁹⁹ Jarosz Report, ¶ 166 (p. 70).

¹⁰⁰ Lawton Report, ¶ 544 (p. 322-323).

¹⁰¹ John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 769-70.

complementary perspectives should lead to reliable and robust findings.¹⁰²

...

Each of those [approaches] should be assessed objectively, ... That is likely to result in a rigorous and robust estimate of reasonable royalty damages representing fair compensation for the patent holder in light of the unauthorized use of a patented invention.¹⁰³

45. There is, however, a sharp dispute as to how, if at all, these generally accepted methods should be applied to the facts of this case. My Initial Report outlines in detail my application of all three approaches to the facts of this case. In contrast, Mr. Jarosz applies *only* one of the three approaches, the Market Approach, and concludes that “the Income Approach is not particularly informative in this case;”¹⁰⁴ Mr. Jarosz does not substantively address the Cost Approach and does not offer any opinion regarding alleged Design-Around Costs, assuming a design-around would have been feasible.¹⁰⁵ In my opinion and for the reasons that I will explain in detail, because of the numerous deficiencies in Mr. Jarosz work in this case, his conclusions are not “rigorous” or “robust.”

1. Application of the *Income Approach* to the Facts of this Case: Measuring the Economic Benefits of the Claimed Invention of the '988 Patent

46. I understand that the Income Approach focuses on the benefits that are the “fruit of infringement” and that such benefits are “a proper basis for computing a reasonable royalty.”¹⁰⁶
47. In my Initial Report, I summarized in detail the economic benefits of the '988 Patent based on Seagate’s own statements and quantification of the benefits associated with PMR.¹⁰⁷ Mr. Jarosz, however, ignores key facts that establish the importance of “the magnetic properties of the writer material.” For example, Mr. Jarosz ignores the 2008 trial testimony of Seagate’s Kenneth Allen during the *Siemens AG v. Seagate Technology, LLC*—a matter in which Mr. Jarosz was Seagate’s

¹⁰² John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 812.

¹⁰³ John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 729.

¹⁰⁴ Jarosz Report, ¶ 322 (p. 137).

¹⁰⁵ Jarosz Report, ¶ 319-321 (pp. 136-137).

¹⁰⁶ *Apple, Inc. v. Motorola, Inc.*, No. 1:11-CV-08540, 2012 WL 1959560, at *11 (N.D. Ill. May 22, 2012), *rev'd on other grounds* at 757 F.3d 1286 (Fed. Cir. 2014).

¹⁰⁷ Lawton Report, ¶¶ 162-187 (pp. 83-95).

damages expert. Dr. Allen testified: “[t]he material [of the write head] speaks to the magnetic properties of the writer material, which is very important.”¹⁰⁸

48. Instead, Mr. Jarosz asserts: “[t]here is no information on profits attributable to the ’988 Patent technology. As a result, the Income Approach is not particularly informative in this case.”¹⁰⁹ This is a false statement; my Initial Report outlines in detail the economic benefits associated with the ’988 Patent. Mr. Jarosz, however, does not substantively address my summary of the economic advantages of the ’988 Patent. Rather, Mr. Jarosz continues to assert his assumption (based on Dr. Fullerton’s opinion) that the ’988 Patent did not enable PMR HDDs—and *falsely claims* that I allocated **“the value of all of PMR to the ’988 Patent.”**¹¹⁰ This is just one example of Mr. Jarosz’ use of the “Straw Man Fallacy.”¹¹¹ Mr. Jarosz stated:

[at ¶ 168] Ms. Lawton’s claim that “the ’988 Patent discloses technology that enabled PMR HDDs, and her corresponding suggestion that the ’988 Patent “created” four economic benefits – (1) Cost Savings Attributable to Lower Component Count”; (2) “Cost Savings Attributable to Increased Yield”; (3) “Increased Revenue and Profits Attributable to an Expanded Market”; and (4) “Increased Revenue and Profits Attribute [sic] to Increased Market Share” – **reflects an improper allocation of the value of all of PMR to the ’988 Patent.**¹¹²

* * *

[at ¶ 139] She appears to have attributed much, if not all, of the benefits associated with PMR technology to the technology covered by the ’988 Patent. ... She then used her estimates of Seagate’s cost savings and increased profit attributable to *all of* PMR as one basis for her valuation analysis for the ’988 Patent alone. In doing so, **Ms. Lawton failed to adequately attribute value to other parts** of the write

¹⁰⁸ Lawton Report, ¶ 162 (p. 83).

¹⁰⁹ Jarosz Report, ¶ 322 (p. 137).

¹¹⁰ Jarosz Report, ¶ 168 (p. 71). *See also* ¶ 139 (p. 58) (“She appears to have attributed much, if not all, of the benefits associated with PMR technology to the technology covered by the ’988 Patent.”), ¶ 171 (p. 72) “Ms. Lawton inappropriately attributed significantly more value to the ’988 Patent than the underlying technology contributed.”).

¹¹¹ “A straw man is a common form of argument and is an informal fallacy based on giving the impression of refuting an opponent’s argument, while actually refuting an argument that was not presented by that opponent. ... The typical straw man argument creates the illusion of having completely refuted or defeated an opponent’s proposition through the covert replacement of it with a different proposition (*i.e.*, ‘stand up a straw man’) and the subsequent refutation of that false argument (‘knock down a straw man’) instead of the opponent’s proposition.” Examples include: “Quoting an opponent’s words out of context ... Oversimplifying an opponent’s argument, then attacking the simplified version, Exaggerating (sometimes grossly exaggerating) an opponent’s argument, then attacking this exaggerated version.” *See* “Straw Man,” *Wikipedia*, available at https://en.wikipedia.org/wiki/Straw_man.

¹¹² Jarosz Report, ¶ 168 (p. 71) (emphasis added).

head, the slider (such as the other components of the write head, the read head, the heater, and the air bearing surface), the HGA (such as the gimbal, microactuators, and electronic components), and the media.¹¹³

49. In the very next paragraph (¶ 169), Mr. Jarosz begins with what he states is “an illustration” of my **alleged “overestimation of the value of the ’988 Patent,”** and ends by stating:

She wrote that Seagate achieved \$4.30 to \$12.00 in cost savings because PMR HDDs required a smaller number of heads than LMR HDDs. Ms. Lawton concluded that **“the ’988 Patent contributed to this cost savings ... [and that it] can be used to determine the reasonable royalty for the use of the ’988 Patent.”**¹¹⁴

50. In ¶ 169, Mr. Jarosz acknowledges that it is my opinion that the ’988 Patent **“contributed** to [the \$4.30 to \$12.00] cost savings” which directly contradicts his false assertion in ¶ 168 that I allocated “all of the value of PMR” to the ’988 Patent.

51. Mr. Jarosz’ claim is false. First, my HGA Cost Savings Differential relates only to the *head* cost savings—and *excludes* the *media* cost savings. Second, Mr. Jarosz’ “illustration” does not address the fact that my reasonable royalty rate of \$0.30 per head is approximately **5.0%**¹¹⁵ to **14.0%**¹¹⁶ of the estimated cost savings of \$4.30 to \$12.00 per HDD (based on PMR achieving the same areal density while eliminating 2 heads per HDD)—and offers no estimate of the portion of the estimated cost savings that he contends should be attributable to “other parts.” Rather, instead of addressing Seagate’s own estimates of cost savings associated with the claimed invention of the ’988 Patent as outlined in my Initial Report, [REDACTED]

[REDACTED]¹¹⁷ This is a nonsequitur as the *cost savings* associated with the claimed invention of the ’988 Patent has nothing to do with Seagate’s intercompany *transfer price* of a wafer level slider.

¹¹³ Jarosz Report, ¶ 139 (p. 58) (emphasis added).

¹¹⁴ Jarosz Report, ¶ 169 (pp. 71-72) (emphasis added).

¹¹⁵ Calculated as \$0.30 per head x 2 heads eliminated per HDD = \$0.60 divided by \$12.00 = 5.0%

¹¹⁶ Calculated as \$0.30 per head x 2 heads eliminated per HDD = \$0.60 divided by \$4.30 = 14.0%

¹¹⁷ Jarosz Report, ¶ 212 (p. 93) (emphasis added).

a) **My Investigation and Analysis Identified the “Incremental Benefit” of the Claimed Invention of the ’988 Patent**

52. Mr. Jarosz’ articles recognize the critical importance of determining a patented technology’s “incremental benefits”¹¹⁸ and noted that **“for some, an Incremental Benefits analysis is the only way to properly value/price a patent.”**¹¹⁹ As noted above, Mr. Jarosz and his co-author Dr. Chapman, published their methodology in a Spring 2013 *Stanford Technology Law Review* article, as described above, noting that all relevant evidence should be considered.¹²⁰

53. Mr. Jarosz described the incremental benefits analysis and its importance as follows:

An Incremental Benefits analysis examines the gains enjoyed by the infringer attributable to use of the patent. Specifically, it calls for an evaluation of the benefits of practicing the patent versus the benefits of practicing the noninfringing, next best alternative. The legal and economic communities have long acknowledged the value of such an examination. In fact, for some, an Incremental Benefits analysis is the only way to properly value/price a patent.

Incremental patent benefits can take several forms. The patent may have allowed

¹¹⁸ See, e.g., Michael J. Chapman, John C. Jarosz, “Response to the Rejoinder: Clearing Up The Confusion,” *Law360*, September 3, 2015, pp. 1-2 of 5, available at http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/law360_rejoinder_response.pdf (“The Meaning of Incremental Benefits: The ‘incremental benefits’ attributable to a particular patented technology refer to the additional benefits attributable to the use of the patent above and beyond those contributed by a host of other value drivers. ... Incremental benefits flow from higher prices, lower costs, or increased volumes that would not have been achieved in the absence of infringement.”).

¹¹⁹ John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 813.

¹²⁰ John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 769-770. See also p. 773 (“We propose direct and objective assessment of a patent’s (1) incremental benefits, (2) licensing comparables, and (3) design-around costs, considering all relevant evidence.”). See also p. 812 (“Instead of relying primarily on a hypothetical negotiation, our approach to the determination of reasonable royalty damages calls for the systematic consideration of *all available evidence* from three different perspectives. The first perspective considers the incremental benefits generated by the infringement relative to the benefits that would be available if the infringer had used the noninfringing, next best alternative. This perspective is referred to as an Incremental Benefits analysis. The second perspective considers the amounts that have been paid in licenses that are similar to the hypothetical license for the use of technologies that are similar to the patented technology and for uses that are similar to the infringing use made of the patented technology by the infringer. This perspective is referred to as a Licensing Comparables analysis. The third perspective considers the costs the infringer would have incurred if it had sought to develop and implement a new noninfringing alternative in lieu of practicing the infringed patented technology after the infringer learned the patent in question was valid, enforceable, and infringed. Individually, each of these perspectives provides insights into the magnitude and nature of the benefits associated with and generated by the infringement of the patented technology. When considered together, these perspectives can provide particularly useful guidance for the ultimate issue in a reasonable royalty determination—namely, the amount of compensation that is needed to adequately compensate the patent holder for an infringement. Moreover, the consideration of all available relevant evidence from multiple and complementary perspectives should lead to reliable and robust findings.”).

the infringer to charge higher *prices* than it otherwise would have. It may have allowed the infringer to generate increased *volumes*. And it may have allowed the infringer to incur lower *costs* of manufacture or sale. In short, an Incremental Benefits analysis focuses on the added profits that the infringement allowed.¹²¹

The noninfringing, next best alternative, which is the baseline against which to measure incremental benefits, can take several forms. It may involve licensing-in of alternative technology. It may entail practicing a different product or process. Or it may encompass exiting the business altogether.¹²²

54. Mr. Jarosz also stated: “The Federal Circuit has appeared in some instances to allow reasonable royalty damages awards that exceed the benefits attributable to the infringed patent—going so far as to say that the infringer need not be permitted to earn a positive return on the infringing product.”¹²³
55. My Initial Report identifies and outlines in detail my analysis of the “incremental benefits” of the claimed invention of the ’988 Patent, namely the cost savings associated with reduced component count and cost, among other factors.¹²⁴ In contrast, in this case, Mr. Jarosz presents no analysis of the “incremental benefits” *associated with* the ’988 Patent—nor does he present an analysis of “design-around costs.” As such, in this case, Mr. Jarosz failed to follow his own published methodology regarding the proper approach for determining a reasonable royalty.

b) **Estimated Cost Savings are an “incremental benefit” and a “well settled” Approach to Determining a Reasonable Royalty**

56. “Cost savings or revenue are a permissible form of calculating patent damages.”¹²⁵ “Reliance upon estimated cost savings from use of the infringing product [to determine a reasonable royalty] is well settled.”¹²⁶ “Although a patentee ‘must carefully tie proof of damages to the claimed

¹²¹ John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 813.

¹²² John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 814.

¹²³ John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 795, fn 128.

¹²⁴ Lawton Report, ¶¶ 162-195 (pp. 83-100).

¹²⁵ *Prism Techs. LLC v. AT & T Mobility, LLC*, No. 8:12CV122, 2014 WL 4705403, at *6 (D. Neb. Sept. 22, 2014), *order clarified*, No. 8:12CV122, 2014 WL 4983800 (D. Neb. Oct. 6, 2014).

¹²⁶ *Hason v. Alpine Valley Ski Area, Inc.*, 718 F.2d 1075, 1077, 1080-81 (Fed. Cir. 1983). *See also Prism Techs. LLC v. AT & T Mobility, LLC*, No. 8:12CV122, 2014 WL 4705403, at *4 (D. Neb. Sept. 22, 2014), *order clarified*, No. 8:12CV122, 2014 WL 4983800 (D. Neb. Oct. 6, 2014) (“[R]evenue-generation and cost-savings are undisputably proper methods for calculating royalty bases.”). *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901,

invention's footprint in the marketplace,' that requirement for valuing the patented technology can be met if the patentee adequately shows that the defendant's infringement allowed it to avoid taking a different, more costly course of action."¹²⁷ Cost savings is a universally accepted approach to determining patent damages when the claimed economic advantage of the invention is cost savings.¹²⁸ Even Mr. Jarosz acknowledges that "[t]here is no reason to ban the use of properly measured incremental benefits (profits) as the basis for a reasonable royalty damages determination. In fact, they should be embraced."¹²⁹ Mr. Jarosz, *et al.*'s December 2002 article

910 (N.D. Ill. 2012), *aff'd in part, rev'd in part and remanded*, 757 F.3d 1286 (Fed. Cir. 2014) ("The difference between conventional damages and a royalty is that often a royalty is actually a form of restitution—a way of transferring to the patentee the infringer's profit, or what amounts to the same thing, the infringer's cost savings from practicing the patented invention without authorization.").

¹²⁷ *Prism Technologies LLC v. Sprint Spectrum LP*, 849 F.3d 1360, 1376 (Fed. Cir. 2017).

¹²⁸ See, e.g., *Hanson v. Alpine Valley Ski Area, Inc.*, 718 F.2d 1075, 1077 (Fed. Cir. 1983) ("[T]he reasonable royalty in this case must be based upon a portion of the annual cost savings attributable to use of the Hanson patent. Expert testimony on this record indicates that one-third of the cost savings would be deemed acceptable to both parties in an arm's length license negotiation. Furthermore, based upon energy costs at the time of infringement in 1972-73, the airless snowmaking method of the Hanson patent generates a dollar savings of \$75.00 per gallon (of water used to make snow) per minute. That is, under the Hanson method, the cost of producing snow using one gallon of water for one minute is \$75.00 less than the cost of producing snow under the compressed air method using one gallon of water for one minute. Thus the cost savings for the Hanson method is a function of any machine's capacity to make snow."). *Powell v. Home Depot USA Inc.*, 663 F.3d 1221, 1240 (Fed. Cir. 2011) ("[Mr. Powell's] evidence included the amount that Home Depot was willing to spend to replace radial saws that were compatible with the Industrialplex saw guards as well as evidence of the cost savings that Home Depot could expect to achieve by reducing claims from employee accidents while using radial arm saws. 'Reliance upon estimated cost savings from use of the infringing product is well settled method of determining a reasonable royalty.'"). *Prism Technologies LLC v. Sprint Spectrum LP*, 849 F.3d 1360, 1376 (Fed. Cir. 2017) ("A price for a hypothetical license may appropriately be based on consideration of the 'costs and availability of non-infringing alternatives' and the potential infringer's 'cost savings.'"). *Prism Techs. LLC v. Sprint Spectrum L.P.*, No. 8:12CV123, 2015 WL 3606180, at *1 (D. Neb. June 8, 2015) ("Mr. Malackowski has offered three damage theories. The first [based on revenue] was excluded. The second and third theories [based on Cost Savings] were introduced in his amended report." Further providing chart showing patentee's Cost-Savings damages theories—and a reasonable royalty based on 3.5% of such Cost-Savings). *Prism Techs. LLC v. AT & T Mobility, LLC*, No. 8:12CV122, 2014 WL 4705403, at *6 (D. Neb. Sept. 22, 2014), *order clarified*, No. 8:12CV122, 2014 WL 4983800 (D. Neb. Oct. 6, 2014) ("In Prism's own words: Indeed, the . . . primary benefits of the Asserted Patents are enjoyed by Defendants in the form of cost savings from using an untrusted network opposed to the non-infringing alternative, such as building a dedicated trusted network at much greater expense. As a result, Mr. Malackowski used a cost based approach to quantify the value of the patented technology to each Defendant ..."). *TracBeam L.L.C. v. AT & T Inc.*, No. 6:11-CV-96, 2013 WL 6175372, at *4 (E.D. Tex. Nov. 25, 2013) ("Mr. Mills is TracBeam's expert on damages. The parties agree an appropriate royalty rate is based on AT&T's cost savings from using the patented technology compared to the best available non-infringing alternative."). See also Christine Meyer, Bryan Ray, "A Critique of Noneconomic Methods of Reasonable Royalty Calculation," in Gregory K. Leonard, Lauren J. Stiroh, Ed., *Economic Approaches to Intellectual Property Policy, Litigation, and Management*, (White Plains: NY, National Economic Research Associates, Inc., 2005), pp. 83-93, at pp. 88-89.

¹²⁹ Michael J. Chapman, Ph.D., John C. Jarosz, "REBUTTAL: It's Not An Inappropriate Reasonable Royalty Rule," *Law360*, August 21, 2015, available at <https://www.law360.com/articles/694171/rebuttal-it-s-not-an-inappropriate-reasonable-royalty-rule>.

in *les Nouvelles* also evidences the fact that he views the costs savings that result from “Cost Reducing Patents” as a valid approach to determining a reasonable royalty for patent infringement.¹³⁰

c) **My Analysis and Opinions Reflect Generally Accepted Cost Savings Methodology and “rational economic behavior and common sense”**

57. My analysis and opinions reflect “rational economic behavior and common sense.” My analysis properly focuses on estimating the *cost savings*—not the *operating profits* which include the cost savings associated with the claimed invention of the ’988 Patent. As one commentator noted, for “cost-reducing patent[s],” reliance on measures of operating profits rather than the estimated cost savings “defies both rational economic behavior and common sense.”¹³¹ In *Prism v. Sprint*, the Judge put it more bluntly and distinguished between cost-savings analysis and revenue-based analysis: “It cannot be overstated that cost-savings analysis should not include the revenue figure as a matter of course.”¹³²
58. In contrast, Mr. Jarosz’ approach to cost savings patents “defies both rational economic behavior and common sense.”¹³³ Mr. Jarosz has advocated for reasonable royalties based on “including the revenue figure as a matter of course” compared to the *operating profits* including the cost savings. For example, Mr. Jarosz’ December 2002 article in *les Nouvelles* provided a “Cost Reducing Patent” illustration shown in **Figure 3.3**,¹³⁴ below. According to Mr. Jarosz, a reasonable royalty based on the “25% Rule” could be \$10,¹³⁵ or **100% of the cost savings** attributable to the “Cost

¹³⁰ Robert Goldscheider, John Jarosz, Carla Mulhern, “Use Of The 25 Per Cent Rule In Valuing IP,” *les Nouvelles*, December 2002, pp. 123-133, at 125, available at <http://docshare01.docshare.tips/files/3558/35581826.pdf>.

¹³¹ Christine Meyer, Bryan Ray, “A Critique of Noneconomic Methods of Reasonable Royalty Calculation,” in Gregory K. Leonard, Lauren J. Stiroh, Ed., *Economic Approaches to Intellectual Property Policy, Litigation, and Management*, (White Plains: NY, National Economic Research Associates, Inc., 2005), pp. 83-93, at pp. 87-89 (Discussing the “Cost Reducing Patent” example in Mr. Jarosz, *et al.*’s December 2002 *les Nouvelles* article).

¹³² *Prism Techs. LLC v. AT & T Mobility, LLC*, No. 8:12CV122, 2014 WL 4705403, at *6 (D. Neb. Sept. 22, 2014), order clarified, No. 8:12CV122, 2014 WL 4983800 (D. Neb. Oct. 6, 2014).

¹³³ Christine Meyer, Bryan Ray, “A Critique of Noneconomic Methods of Reasonable Royalty Calculation,” in Gregory K. Leonard, Lauren J. Stiroh, Ed., *Economic Approaches to Intellectual Property Policy, Litigation, and Management*, (White Plains: NY, National Economic Research Associates, Inc., 2005), pp. 83-93, at pp. 87-89 (Discussing the “Cost Reducing Patent” example in Mr. Jarosz, *et al.*’s December 2002 *les Nouvelles* article).

¹³⁴ Robert Goldscheider, John Jarosz, Carla Mulhern, “Use Of The 25 Per Cent Rule In Valuing IP,” *les Nouvelles*, December 2002, pp. 123-133, at 125, available at <http://docshare01.docshare.tips/files/3558/35581826.pdf>.

¹³⁵ Calculated as (\$40 Operating Profit x 25% Rule of Thumb) divided by \$100 Revenues = 10% of Revenues, or \$10.

Reducing Patent.”¹³⁶ In an August 2015 *Law360* article, Mr. Jarosz and his co-author continued to advocate for the reasonableness of the so-called “100% Rule.”¹³⁷

Figure 2
25 Per Cent Rule Illustration - Cost Side

	No Patent	Cost Reducing Patent	25 Per Cent Rule
Revenues	\$100	\$100	
Cost of Sales	\$40	\$30	
Gross Margin	\$60	\$70	
Operating Expenses	\$30	\$30	
Operating Profits	\$30	\$40	$(\$40 \times 25\%) / \$100 = 10\%$

FIGURE 3.3

59. Mr. Jarosz and his co-authors described this “Cost Side” analysis as follows:

A patent may also reduce product costs. Figure 2 illustrates that by applying the 25 Per Cent Rule to such expected operating profits results in a royalty rate of 10 per cent. Valuers (and courts) who use the 25 Per Cent Rule occasionally split the expected or actual cost (*i.e.*, incremental) savings associated with the IP at issue. According to Degnan and Horton’s survey of licensing organizations who base a royalty payment on projected cost savings, almost all of them provide for the licensee paying 50 per cent or less of the projected savings. The apparent reasoning is that such incremental benefits should be shared.

Splitting the cost savings by 75/25, however, may not be consistent with the 25 Per Cent Rule. In Figure 2 [above], the incremental (or additional) cost savings are \$10. Splitting that amount (\$10) by 25 per cent, results in a running royalty rate of 2.5 per cent ($\$10 \times 25\% / \100), which is 1/16 of the new “product” profits, rather

¹³⁶ Robert Goldscheider, John Jarosz, Carla Mulhem, “Use Of The 25 Per Cent Rule In Valuing IP,” *les Nouvelles*, December 2002, pp. 123-133, at 125, 127, available at <http://docshare01.docshare.tips/files/3558/35581826.pdf>.

¹³⁷ Michael J. Chapman, Ph.D., John C. Jarosz, “REBUTTAL: It’s Not An Inappropriate Reasonable Royalty Rule,” *Law360*, August 21, 2015, available at <https://www.law360.com/articles/694171/rebuttal-it-s-not-an-inappropriate-reasonable-royalty-rule>.

than ¼. Applying the Rule to *incremental* savings (or benefits) results in a running royalty that is lower than that dictated by the 25 Per Cent Rule. It may under compensate the IP owner. The 25 Per Cent Rule, in its pure sense, should be applied to fully loaded operating profits, not to already computed incremental benefits.¹³⁸

...

In theory, the licensee should be willing to accept a royalty that is close to 100 per cent (not 25 per cent) of the cost savings.¹³⁹

60. Mr. Jarosz has continued to advocate for the use of “Rules of Thumb,”¹⁴⁰ even after the Federal Circuit rejected it in *Uniloc*.

d) **My HDD Head Costs Savings Analysis and Opinions Fit the Facts of this Case**

61. In determining the reasonable royalty, the Federal Circuit “insist[s] on testimony tied to the particular facts” of the case.¹⁴¹ I understand that damages opinions must be based on a theory or methodology that is reliable—and such theory or methodology must “fit” the facts of the case.¹⁴² I understand that the “fit” requirement will not be satisfied if “the data relied upon by the expert is materially different from the data relevant to the facts of the case” or “the expert failed to consider the necessary factors, or if the analysis premised upon faulty assumptions.”¹⁴³ I also understand that the burden is on the expert to connect the analyses, studies, models or experiments that form the basis of their opinions to the facts of the case.¹⁴⁴

¹³⁸ Robert Goldscheider, John Jarosz, Carla Mulhern, “Use Of The 25 Per Cent Rule In Valuing IP,” *les Nouvelles*, December 2002, pp. 123-133, at 126, *available at* <http://docshare01.docshare.tips/files/3558/35581826.pdf>.

¹³⁹ Robert Goldscheider, John Jarosz, Carla Mulhern, “Use Of The 25 Per Cent Rule In Valuing IP,” *les Nouvelles*, December 2002, pp. 123-133, at 127, *available at* <http://docshare01.docshare.tips/files/3558/35581826.pdf>.

¹⁴⁰ *See, e.g.*, Michael J. Chapman, Ph.D., John C. Jarosz, “REBUTTAL: It’s Not An Inappropriate Reasonable Royalty Rule,” *Law360*, August 21, 2015, *available at* <https://www.law360.com/articles/694171/rebuttal-it-s-not-an-inappropriate-reasonable-royalty-rule> (“... [5] Further, they [Brown & Rooklidge] characterize this decision as a new ‘rule of thumb’ (which they anointed ‘the 100 percent rule’) ... Second, awarding 100 percent of the incremental benefits (profits) to the party responsible for those benefits generated by the SSPPU is a reasonable outcome of a hypothetical negotiation between an alleged infringer and the patent holder.”). *See also* John C. Jarosz, Carla S. Mulhern, Michael Wagner, “The 25% Rule Lives On,” *Law360*, September 8, 2010, *available at* <https://www.law360.com/articles/187507/the-25-rule-lives-on>. Robert Goldscheider, John Jarosz, Carla Mulhern, “Use of the Twenty-Five Percent Rule in Valuing Intellectual Property,” *Law Explorer*, October 11, 2015, *available at* <https://lawexplores.com/use-of-the-twenty-five-percent-rule-in-valuing-intellectual-property/> (same as December 2002 *les Nouvelles* article of the same title).

¹⁴¹ *VirnetX, Inc. v. Cisco Sys., Inc., et al.*, 767 F.3d 1308, 1333 (Fed. Cir. 2014).

¹⁴² *See, e.g.*, *IN RE Omeprazole Patent Litigation*, 490 F. Supp.2d 381, 401 (S.D.N.Y. 2007).

¹⁴³ *See, e.g.*, *IN RE Omeprazole Patent Litigation*, 490 F. Supp.2d 381, 401 (S.D.N.Y. 2007).

¹⁴⁴ *See, e.g.*, *IN RE Omeprazole Patent Litigation*, 490 F. Supp.2d 381, 401 (S.D.N.Y. 2007).

62. My initial report sets forth in detail the facts that are relevant to the determination of LMS's damages, assuming liability, and connect such facts to my analyses and opinions. In summary, my analysis and opinions fit the facts in this case because it focuses on estimating the *cost savings* to which the '988 Patent contributes—as estimated and reported by Seagate's longtime CFO, Charles C. Pope, in January 2006,¹⁴⁵ shortly before the October 31, 2006 hypothetical negotiation date in this case.
63. In contrast, Mr. Jarosz relies on a highly selective and limited number of disjointed facts which confuse and obfuscate the central issues. This will be discussed in more detail below.
64. It should also be noted that the January 19, 2006 Seagate earnings call transcript—that sets forth Seagate's HDD Head Cost Savings estimate—is another document that Mr. Jarosz apparently did not review and/or rely upon.¹⁴⁶

e) **My Methodology and Analysis Isolate the Incremental Value “associated with the infringement” to the Extent Possible**

65. Mr. Jarosz recognizes that *Georgia-Pacific* Factor Nos. 8, 11, and 6 are directed to identifying “the benefits *associated with* infringement. ... Taken together, these considerations may establish an upper bound on the amount of reasonable royalty damages that might be awarded to the patent holder, as these considerations seek to quantify *all of the benefits* to the alleged infringer that are *associated with* the alleged infringement.”¹⁴⁷
66. In August 2015, Mr. Jarosz and his co-author stated: “In recent years, the Federal Circuit has emphasized the importance of isolating, to the extent possible, the specific incremental value contributed by the alleged infringement when assessing reasonable royalty damages.”¹⁴⁸ Mr. Jarosz, however, recognizes that “in practice, rarely can one identify the next best alternative to use of the IP, let alone accurately isolate the incremental benefit associated solely with the use of

¹⁴⁵ Lawton Report, ¶ 175 (p. 89) (*citing* “Seagate F206 (Qtr Ending Dec 30, 2005) Earnings Release Conference Call Transcript (STX),” *SeekingAlpha*, January 19, 2006, pp. 13-14 of 30.)

¹⁴⁶ Jarosz Tab 2 – Documents Reviewed and/or Relied Upon.

¹⁴⁷ John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 816 (emphasis in original).

¹⁴⁸ Michael J. Chapman, Ph.D., John C. Jarosz, “REBUTTAL: It's Not An Inappropriate Reasonable Royalty Rule,” *Law360*, August 21, 2015, available at <https://www.law360.com/articles/694171/rebuttal-it-s-not-an-inappropriate-reasonable-royalty-rule>.

that IP.”¹⁴⁹ Mr. Jarosz also recognizes that “[i]n the absence of perfect information isolating the incremental benefit of the IP, the royalty expert must rely on a variety of tools and information combined with his or her judgment, to arrive at a royalty conclusion.”¹⁵⁰

67. In fact, in September 2016,¹⁵¹ Mr. Jarosz testified at the *MobileMedia Ideas LLC* [now IronWorks Patents] v. *Apple Inc.* trial on behalf of the patentee, *MobileMedia Ideas LLC*, regarding his reasonable royalty analysis and opinions pertaining to the alleged infringement of Claims 12 and 2 U.S. Patent No. RE 29,231 (“the ’231 patent”).¹⁵² The Court described the claimed invention of the ’231 patent as follows: “The patent teaches communication terminal equipment and a method for stopping or reducing the volume of an alert sound for an incoming call on a telephone.”¹⁵³ In contrast, Mr. Jarosz’s CV described the patents as “directed to incoming call, playlist, and location detection features used in smartphones, tablets, and portable media players,”¹⁵⁴ whereas at trial, he described the ’231 patent “the **polite ignore patent**, as best I understand. And it allows for an

¹⁴⁹ John C. Jarosz, Carla S. Mulhern, Michael Wagner, “The 25% Rule Lives On,” *Law360*, September 8, 2010, available at <https://www.law360.com/articles/187507/the-25-rule-lives-on>.

¹⁵⁰ John C. Jarosz, Carla S. Mulhern, Michael Wagner, “The 25% Rule Lives On,” *Law360*, September 8, 2010, available at <https://www.law360.com/articles/187507/the-25-rule-lives-on>. See also John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 814-16 (“*Isolating Incremental Benefits*: When the infringer sells a product that is *identical* to the infringing product *except for the inclusion of the patented technology*, the identification and quantification of incremental benefits is straightforward. That is, the difference in financial performance between the two products provides a direct measure of the amount of compensation that may be due to the patentee (i.e., the value of the “use [of the patent] made of the invention by the infringer.” A payment equivalent to that difference arguably allows a patent holder to be fully compensated for its contribution (i.e., the patented invention) to the infringing product, yet still allows the infringer a normal return associated with its own contributions. In most cases, however, it is extremely difficult to completely isolate and/or precisely quantify the incremental benefits of an infringed patent. Part of that is because such benefits, standing alone, are inherently difficult to measure. And the difficulties are compounded in complex and dynamic product and process environments where the benefits provided by a patent are often intertwined with scores, even hundreds, of other value drivers. In spite of the difficulties, a royalty payment needs to reflect the benefits *attributable* to the infringement and should not include compensation for the use of nonpatented contributors of value. The exercise of attributing value has come to be known as “apportionment.” Considerations in apportionment often include disentangling joint effects, providing an adequate return for the infringer’s own contributions (i.e., other intellectual property, technical know-how, business acumen, and marketing and sales infrastructure), and recognizing the obligations associated with inputs provided by other intellectual property owners (i.e., royalty stacking/Cournot complements). In the context of a reasonable royalty damages determination, disentanglement of the effects of various contributors of value to the infringing product can be challenging. The degree to which the contributions of the patent at issue can be accurately and objectively isolated will determine the extent to which this approach provides useful guidance for the determination of reasonable royalty damages..

¹⁵¹ *Ironworks Patents, LLC v. Apple, Inc.*, 255 F. Supp. 3d 513, 517 (D. Del. 2017).

¹⁵² *Ironworks Patents, LLC v. Apple, Inc.*, 255 F. Supp. 3d 513, 528–29 (D. Del. 2017).

¹⁵³ *Ironworks Patents, LLC v. Apple, Inc.*, 255 F. Supp. 3d 513, 518 (D. Del. 2017).

¹⁵⁴ Jarosz Report, Tab 1, p. 4.

incoming call to be silenced by the person receiving the call, but it's silenced in a way that future calls will not be silenced and the caller will not be sent immediately to voice mail,"¹⁵⁵ and described the accused feature as the "silence incoming call" feature.¹⁵⁶ According to Mr. Jarosz, the "main thing" of the '231 patent is that when a call is received, the ringer can be shut off such that the person who is calling doesn't know that the ringer has been shut off.¹⁵⁷ Mr. Jarosz testified that he did offer any marketing materials that highlight the accused feature.¹⁵⁸

68. In its June 2017 decision, the Court described Mr. Jarosz' trial presentation as follows:

Before addressing the qualitative *Georgia Pacific* factors, Jarosz discussed the two quantitative approaches that he took: licensing comparables [Market Approach] and incremental benefits [Income Approach]. Jarosz evaluated various license agreements into which plaintiff had entered, and he expressed the opinion that "[f]rom the licensing comparable approach . . . a reasonable range is 12-and-a-half to 50 cents per phone for the '231 patent. According to the incremental benefits approach, Jarosz compared defendant's "cut, copy, and paste" feature available on the iPhone as part of a "software upgrade[] covering several features" that defendant had valued at \$25 per phone "in its signed financials." Jarosz opined that the cut, copy, and paste feature was worth between 30 cents and 83 cents per phone. Based upon this quantitative analysis, Jarosz expressed that "the range from the licensing comparables and incremental benefits is 12 and-a-half cents to \$0.83. Jarosz then explained that he employed the *Georgia-Pacific* factors to arrive at a reasonable royalty "toward the middle to lower end of the [quantitative] range . . . of \$0.25 per phone. ...¹⁵⁹

¹⁵⁵ *Ironworks Patents, LLC v. Apple, Inc.*, 255 F. Supp. 3d 513, 528–29 (D. Del. 2017).

¹⁵⁶ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 564:25-565:1 ("A. ... silence incoming call, which is the feature we're talking about here,").

¹⁵⁷ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Cross), 575:1-575:11.

¹⁵⁸ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Cross), 601:14-601:17.

¹⁵⁹ *IronWorks Patents, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Memorandum Order dated June 12, 2017, pp. 21-22 of 30. See also *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 537:3-537:8 ("A. My ultimate opinion is that a reasonable royalty that would fairly and adequately compensate MobileMedia is 25 cents per phone. Applying that 25 cents to the number of iPhones that have been accused of infringement here, which is 71.5 million phones, results in total damages of \$17.9 million."), 567:16-568:6 ("Q. So you did two quantitative approaches, the licensing comparables and the incremental benefits. What does [Exhibit] 411 show? A. t's a summary of my quantitative analysis. So when I put all the information together, what did the data show me. And I put here on the top of things that you just saw in the previous slide, and at the bottom, I have put the licensing comparables range that we talked about from 12 and-a-half to \$0.50 per phone for just the '231 patent, the incremental benefits range is %+\$0.30 to \$0.83 per phone, just for the '231 patent. That largely comes from cut, copy, and paste. So the range from the licensing comparables and incremental benefits is 12 and-a-half cents to \$0.83. There are observations that are much higher than that, so that gave me some confidence that the range I had wasn't too aggressive.").

69. In *MobileMedia*, Mr. Jarosz’ “Incremental Benefits” analysis focused on “cut, copy, and paste,” “an ease of use feature that [Apple] added through a software upgrade in late 2009.”¹⁶⁰ Mr. Jarosz relied on a litigation survey with 1,500 respondents in an attempt to provide support regarding his contention that “the silence incoming call feature is viewed as important ...”¹⁶¹ Mr. Jarosz acknowledged that there are other ways to silence a ring tone other than the ’231 patent,¹⁶² and that the ’231 patent “certainly doesn’t directly drive [demand] as best I can tell. It may indirectly [drive demand] in the sense that it improves the user experience, it improves the ease of use, ...”¹⁶³
70. Mr. Jarosz’ \$0.30 to \$0.83 per iPhone was estimated based on Apple’s fair value estimates of its software upgrades in 2009 (\$25) and 2010 (\$10) divided by the number of features he associated with each of the upgrades (15 features for the 2009 upgrade; 16.5 features for the 2010 upgrade), divided by 2 years for each upgrade to account for the 2-year duration of the upgrade.¹⁶⁴ Mr. Jarosz presented data regarding Apple’s reasonable royalty rates (which Mr. Jarosz described as “[p]rices that it [Apple] deemed appropriate for certain of its patents on ease-of-use features that it was asserting against Samsung”¹⁶⁵) for certain features it claimed in the *Apple v. Samsung* litigation

¹⁶⁰ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 561:14-561:16.

¹⁶¹ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 564:18-565:19.

¹⁶² *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Cross), 598:24-599:1 (“Q. ... Just at a very, very high level, you would agree there are many ways to silence a ring tone; correct? A. I understand that there are ways to do that.”).

¹⁶³ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Cross), 601:24-602:11.

¹⁶⁴ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 563:16-564:1. *See also* 564:6-564:13 (“A. I meant features, but I frequently misspeak, so I have no problem with you interrupting, nor does anyone in my family. The amount then of dividing [\$]25 by the 15 features and [\$]10 by the 33 – I’m sorry – [\$]25 by the 30 features and [\$]10 by the 33 features gives me a rate of \$0.30 to \$0.83 per phone as valued by Apple Computer outside of litigation.”), 567:7-567:11 (“Q. What was the result then, in your opinion, the range that came out of applying the incremental benefits analysis? A. I think the appropriate range is most heavily weighted toward the cut, copy, and paste. It should say %+\$0.30 to \$0.83 on this slide. ...”).

¹⁶⁵ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Cross), 589:20-589:25.

that ranged from \$1.09 to \$3.10 per feature per unit,¹⁶⁶ as a purported “reasonableness check”¹⁶⁷ even though he did not rely on any opinion that the Apple patents asserted in *Apple v. Samsung* were comparable to the ’231 patent,¹⁶⁸ and he acknowledged that “these [the Apple reasonable royalty rates from \$1.09 to \$3.10] are probably inflated versus what would be appropriate for our situation,”¹⁶⁹ and would need to be reduced,¹⁷⁰ although he presented no opinion regarding the extent of the inflation or the amount of reduction needed.

71. Mr. Jarosz’ methodology and approach in the *MobileMedia* case is somewhat analogous to my methodology and approach in this case insofar as Mr. Jarosz testified that he:

- a) “reviewed quite a bit of evidence,”¹⁷¹
- b) Claimed damages period covered the date of first infringement through patent expiration,¹⁷² (analogous to my opinion in this case).
- c) Described Apple’s refusal to take a license as “**hold-out**,”¹⁷³ (analogous to Seagate’s use of “hold-out” in patent cases involving asymmetric access to financial resources, including at least *Rodime*).

¹⁶⁶ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 560:2-561:3.

¹⁶⁷ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 566:2-566:7.

¹⁶⁸ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Cross), 597:3-597:21.

¹⁶⁹ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 566:21-566:22.

¹⁷⁰ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 566:12-566:13.

¹⁷¹ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 544:10-544:21 (“Q. And what type of evidence did you review? A. I reviewed quite a bit of evidence. The other day, Mr. Horn was shown a folder about six or seven inches thick with letters. That just is the tip of the iceberg of the information that I considered that Apple had turned over in this litigation. There is quite a bit of information that they provided on their financial performance, their marketing plans, surveys that they had done, licenses that they have. I also had quite a bit of information from MobileMedia about license proposals, actual licenses, about their business activities. I looked at the reports of several experts in this matter, including Dr. Meldal and Dr. Erdem. I spoke with Mr. Horn. I gathered information from the public domain about the business and about the specific accused Apple iPhones. And I attended the trial here.”).

¹⁷² *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 542:19-542:25.

¹⁷³ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Cross), 604:11-605:6 (emphasis added).

- d) MobileMedia’s royalty information was “[e]xtremely important” citing “the MobileMedia rate sheet and the signed licenses that it entered into,”¹⁷⁴ **“it could be that the rate of \$0.50 [per unit] in the rate sheet in the draft license is appropriate,”**¹⁷⁵ (analogous to Dr. Lambeth’s January 21, 1997 memo to Dr. Kryder regarding [REDACTED], and the December 2010 Acacia-Samsung analysis [REDACTED]).
- e) Distinguishing actual MobileMedia’s licenses testifying “[i]n the real world, parties often negotiate not knowing how strong the patent rights are,”¹⁷⁶ and **“[i]n the real world, we know Doro and Plantronics paid less than MobileMedia deemed appropriate. In the real world, there are uncertainties. [In the hypothetical negotiation,] [t]hose uncertainties are removed,”**¹⁷⁷ (analogous to my consideration of the Acacia-Samsung agreement and the LMS-TDK settlement and license agreement).
- f) Applied the “Incremental Benefits” or “Income Approach” based on a proxy, testifying that he **“looked to see what the benefits were to Apple of using the patented invention, and I was able to get information based on evaluating how other similar features similar to the polite ignore have been valued by Apple outside of litigation in the real world and in litigation,”**¹⁷⁸ (analogous to Charles Pope’s Seagate’s CFO, January 2006 \$18 per HDD estimate of the cost savings associated with PMR).
- g) Describing the benefits of the ‘231 patent, ease of use, to Apple testifying **“[e]ase of use to Apple is extremely important,”**¹⁷⁹ (analogous to the fact that PMR was extremely important to Seagate, *i.e.*, Seagate “bet the business” on PMR”).
- h) Describing the benefits of the ‘231 patent, ease of use, to Apple’s customers testifying that it is **“[e]xtremely important”** based on Apple surveys,¹⁸⁰ (analogous to documents

¹⁷⁴ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 546:6-546:8. Mr. Jarosz’ trial testimony regarding the confidential details of MobileMedia’s rate sheet and licenses is under seal. *See* 546:17-557:1 (Direct), 610:11-635:25 (Cross), 636:1-644:25 (Re-direct).

¹⁷⁵ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 569:11-569:12 (emphasis added).

¹⁷⁶ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 539:3-539:7.

¹⁷⁷ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 569:7-569:10 (emphasis added).

¹⁷⁸ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 557:16-557:21 (emphasis added). *See also* 557:22-558:12 (Describing the benefits of the ‘231 patent as “oriented toward ease of use or an improved user experience. ...”).

¹⁷⁹ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 558:13-558:24 (emphasis added).

¹⁸⁰ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 558:25-559:8 (emphasis added).

showing OEM customer and end customer demand for increased areal density at lower cost).

- i) **“There are many other things that impact ease of use. ... [T]his polite ignore feature does not drive purchase decisions in and of itself,”**¹⁸¹ (analogous to many things contribute to PMR, however, the claimed invention of the '988 Patent enabled PMR).
- j) Concluded that the **MobileMedia-HTC and MobileMedia-Blackberry agreements “don’t provide much assistance” because they resulted from litigation,**¹⁸² (analogous to my conclusion regarding the LMS-TDK Settlement and License agreement and the LMS-Acacia settlement agreement).
- k) Concluded that **“the \$40 million [the full patent portfolio that MobileMedia acquired from Sony¹⁸³] valuation” was “of limited guidance because of the uncertainty associated with the strength of the patent portfolio,”**¹⁸⁴ (analogous to my conclusion regarding the LMS-TDK Settlement and License agreement, the Acacia-Samsung agreement, and Dr. Lambeth’s tax valuation).
- l) Relied on certain **valuation evidence “that wasn’t at all in the context of the litigation,”**¹⁸⁵ namely, Apple’s “cut, copy, and paste,”¹⁸⁶ (analogous to Charles Pope’s Seagate’s CFO, January 2006 \$18 per HDD estimate of the cost savings associated with PMR that was cited in the ordinary course of business during a Seagate earnings call).
- m) Relied on a subset of 15 features that Apple specifically “called out” in a software upgrade for which Apple estimated the fair value¹⁸⁷ at \$25, **“although there was mention of more**

¹⁸¹ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 559:9-559:17 (emphasis added).

¹⁸² *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Cross), 607:11-607:22 (emphasis added).

¹⁸³ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Cross), 580:23-580:25.

¹⁸⁴ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Cross), 580:7-580:15 (emphasis added).

¹⁸⁵ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 561:6-561:12 (emphasis added).

¹⁸⁶ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 559:9-559:17. *See also* 561:23-562:5 (“Q. All right. And is that \$25 figure just an arbitrary accounting number? A. No, it reported in its signed financial statements that the value of the software upgrade, covering several features, was \$25. That is the amount it reported to the public in its signed financials that it could receive or should receive if it separately sold the software upgrade rather than including them in your original purchase price.”).

¹⁸⁷ *See, e.g., MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 562:16-562:19 (“A. ... So they had another upgrade, a software upgrade in the following year. And for that software upgrade, it [Apple] reported that \$10 was the fair value of the upgrade.”).

than 100 features, 15 were called out, and one, the very first one called out was cut, copy, and paste,”¹⁸⁸ (analogous to my focus on heads produced in the U.S. to determine the TDK effective royalty rate).

72. The key difference between Mr. Jarosz’ work in *MobileMedia* and my work in this case is that I relied on Seagate’s January 2006 (shortly before the date of the hypothetical negotiation) estimate of the *cost savings* associated with PMR—which the claimed invention of the ’988 Patent helped to enable. In contrast, Mr. Jarosz did not *directly* assess Apple’s expectations of the value of the accused “silence incoming call” feature at the time of the hypothetical negotiation in July 2008¹⁸⁹—rather, Mr. Jarosz relied on *later evidence* for a *non-accused feature*, namely Apple’s “cut, copy, and paste” feature, which he opines is a reasonable valuation *proxy*, based on a litigation survey.
73. In summary, Mr. Jarosz’ work and opinions in *MobileMedia* on behalf of the *patentee* stand in sharp contrast to his work on behalf of the *accused infringer*, Seagate, in this case.

f) **My Estimate of Seagate’s HDD Head Cost Savings is a Reasonable Basis for Determining a Reasonable Royalty; Seagate Offers No Alternative HDD Head Cost Savings Analysis**

74. As explained in detail in my Initial Report, it is my opinion that my “HGA Cost Savings Differential Model”—***and the resulting cost savings differential estimate***—is a reasonable basis for determining a reasonable royalty rate in view of the facts of this case.
75. Mr. Jarosz appears to contend that my cost savings analysis is over inclusive and allegedly is not limited to the cost savings specifically attributable to the use of the claimed invention of the ’988 Patent. Mr. Jarosz, however, “fails to offer evidence assessing the value of the patented [invention] itself.”¹⁹⁰ Mr. Jarosz simply asserts that my cost savings “valuation for the ’988 Patent is unreasonable,”¹⁹¹ but fails to present an alternative cost savings analysis.

¹⁸⁸ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 561:16-561:22. *See also* 563:8-563:15 (Describing Exhibit 361: “A. ... you will see this is a description of a listing of the particular features that Apple noted to the public associated with its iOS 3.0 software upgrade. You will see the very first feature they talk about across those three phones are cut, copy, and paste. There are other features, but it is one of the 15 that is brought to the particular attention of the users.”).

¹⁸⁹ *See, e.g., MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Cross), 606:8-606:9 (“Q. Well, your hypothetical negotiation is 2008; right? A. That’s right.”). *See also* 540:17-540:24 (Direct) (*citing* July 2008).

¹⁹⁰ *TracBeam L.L.C. v. AT & T Inc.*, No. 6:11-CV-96, 2013 WL 6175372, at *4 (E.D. Tex. Nov. 25, 2013).

¹⁹¹ Jarosz Report, ¶ 212 (p. 93) (emphasis added).

76. In *TracBeam v. AT&T*, the proper measurement of cost savings was addressed. In that case, the patentee, TracBeam, did not focus on differential cost savings—but rather, focused on “the cost of AT&T’s location network [as] an accurate measure of the patent’s value because the other non-infringing alternatives are impractical or more expensive than a new network. Therefore, according to TracBeam, the cost of building a new, non-infringing location network is the value of the patented method.”¹⁹² AT&T objected and claimed that “the cost of a new network is an inaccurate measure and inflates the base for the royalty analysis,” and asserted that the value of the invention could be shown by “tak[ing] the difference in cost between the redundant system and the existing system,” although the defendant, AT&T, had not done that analysis.¹⁹³ As a result, the Court concluded that it was “unable to apportion anything less than the full cost of a location network to the patented technology” and permitted TracBeam to present its analysis.¹⁹⁴
77. In this case, my analysis reflects the *cost savings differential* approach advocated by the defendant, AT&T. I analyzed the differential cost savings as measured by the head cost savings associated with head cost in PMR HDDs when compared to the higher head cost in LMR HDDs. This reflects the *minimum* cost savings in view of the market transition to PMR and the fact that the cost differential comparator, LMR, was “**out of gas**” and therefore was not an acceptable non-infringing alternative in view of the facts of this case and the circumstances in October 2006. Furthermore, neither Mr. Jarosz nor Seagate have presented an alternative cost savings differential comparator based on any other (*e.g.*, other than LMR, my cost differential comparator) alleged non-infringing alternative(s) beyond the vague generalizations that are discussed below.

¹⁹² *TracBeam L.L.C. v. AT & T Inc.*, No. 6:11-CV-96, 2013 WL 6175372, at *4 (E.D. Tex. Nov. 25, 2013).

¹⁹³ *TracBeam L.L.C. v. AT & T Inc.*, No. 6:11-CV-96, 2013 WL 6175372, at *4 (E.D. Tex. Nov. 25, 2013).

¹⁹⁴ *TracBeam L.L.C. v. AT & T Inc.*, No. 6:11-CV-96, 2013 WL 6175372, at *5 (E.D. Tex. Nov. 25, 2013).

2. Application of the Cost Approach to the Facts of this Case: Alleged Availability of Acceptable, Non-Infringing Alternatives and Design-Around Costs

78. I understand that “[t]he cost (including lost sales) of having to invent around is therefore one method of estimating the reasonable royalty for a license.”¹⁹⁵ In general, “the costlier the invent-around, the higher the ceiling on a reasonable royalty.”¹⁹⁶
79. In a Spring 2013 *Stanford Technology Law Review* article, Mr. Jarosz and his Analysis Group co-author, Dr. Chapman, described the importance of “Design-Around Costs” in determining a reasonable royalty as follows:

The third perspective that should be used to determine reasonable royalty damages, if possible, is Design-Around Cost analysis. It examines the costs that the infringer would have incurred to generate the benefits of the patent, as closely as possible, without practicing the patent. In essence, it evaluates the cost of avoiding infringement by adopting the non-infringing, next best alternative. The approach has become increasingly important because of the heightened pace of, and ability to pursue, product and process enhancements and extensions.

Given the emphasis on the adoption of the noninfringing, next best alternative, there is a high degree of similarity between an Incremental Benefit analysis and a Design-Around Cost analysis. The key difference is the degree of availability of the non-infringing, next best alternative. In some cases, infringers have already-commercialized options available to them. These options may include a prior generation product or process or an existing variant of, or reasonable alternative to, the infringing product or process. In those instances, the Incremental Benefit analysis described above can and should be used to determine a reasonable royalty.
...¹⁹⁷

1. Quantifying Design-Around Costs

A central challenge in implementing a Design-Around Cost analysis is to identify all of the relevant costs. That means including both *accounting* and *economic* costs. The former include avoided research, development, and product launch expenditures necessary to develop and commercialize the noninfringing, next best alternative. Depending on the facts of the case, they may also encompass expected costs of unsuccessful efforts because there is no guarantee that the first potential design-around will represent a commercially viable alternative to the infringed

¹⁹⁵ *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901, 907 (N.D. Ill. 2012), *aff'd in part, rev'd in part and remanded*, 757 F.3d 1286 (Fed. Cir. 2014)..

¹⁹⁶ *Apple, Inc. v. Motorola, Inc.*, No. 1:11-CV-08540, 2012 WL 1959560, at *9 (N.D. Ill. May 22, 2012), *rev'd on other grounds at*, 757 F.3d 1286 (Fed. Cir. 2014).

¹⁹⁷ John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 823-24.

patent.

Economic costs include those associated with the marketplace frictions that may arise in transitioning to the noninfringing, next best alternative. To the extent that the transition to a noninfringing alternative involves some delay, the accused infringer may, for example, be unable to sell its product during the period in which the noninfringing alternative is developed, or it may suffer impairment of existing customer relationship or consumer goodwill. Further, to the extent that the noninfringing and infringing products are imperfect substitutes, the accused infringer may experience lower sales volumes or prices for its noninfringing products, and others. These costs should, to the extent possible, be considered when analyzing Design-Around Costs.¹⁹⁸

...

Recently, the Federal Circuit has recognized the wisdom of encouraging consideration of the infringer's design-around options in reasonable royalty damages determinations.

A variety of lower courts have written that noninfringing alternative technologies should be considered as part of a reasonable royalty analysis. Consideration of Design-Around Costs increasingly has become an expected and accepted element of reasonable royalty damages analyses. ...

Economics, court dicta, and legal reasoning all suggest that properly calculated costs of adopting a design-around can and should be considered in determining the amount of reasonable royalty damages that a patent holder should receive as compensation for an infringement.¹⁹⁹

80. LMS's technical expert, Dr. Coffey, opined that there are no acceptable, available non-infringing alternatives to the '988 Patent,²⁰⁰ and that "Seagate has not identified any alternative material that it could implement that would provide the benefits and advantages of the '988 Patent."²⁰¹ In addition, given the importance of critical time-to-market and time-to-volume and the high cost of being late in the HDD industry, as discussed at length in my Initial Report—delaying product launches is not an option. Furthermore, given that LMR was **"really just out of gas"** the HDD industry needed to shift to PMR and such shift was already in process as of October 31, 2006. In

¹⁹⁸ John C. Jarosz, Michael J. Chapman, "The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog," *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 825-26 (emphasis in original).

¹⁹⁹ John C. Jarosz, Michael J. Chapman, "The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog," *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 826-27.

²⁰⁰ Lawton Report, ¶ 203 (p. 103).

²⁰¹ Lawton Report, ¶ 204 (p. 103).

view of the market situation and high stakes in October 2006, it is unlikely that the risk and delays associated with attempting to develop an AANIA would have been acceptable to Seagate. The high risk and potential high reward are demonstrated by the following:

- a) As of September 2006, the HDD market was at an **“inflection point.”** James Cirico, Jr., Seagate’s EVP of Manufacturing Operations, stated: “We are at an inflection point in this industry. If I had to sum up the industry for the next 12 to 24 months in a word, it is ‘uncertainty.’”²⁰² Mr. Jarosz did not review the cited September 25, 2006 *EE Times* article.²⁰³
- b) The significance and importance of the PMR—described in April 2006 as **“the first major upgrade in recording data on disk drives since the first drive was created by IBM 50 years ago.”**²⁰⁴ In August 2006, PMR was described as **“the biggest revolution in hard disk drive technology ..., for sure.”**²⁰⁵ Mr. Jarosz did not review the cited May 10, 2006 HGST presentation, “Prospects for Magnetic Recording for the Next 10 Years,”²⁰⁶ or the August 10, 2006 *Network Computing* analysis.²⁰⁷
- c) The importance of the HDD’s market transition to PMR. For example, “[i]n May 2006, HGST’s Roger Wood stated that PMR was **‘[e]ssential to continued areal density growth.’**”²⁰⁸ Mr. Jarosz did not review the cited documents.²⁰⁹
- d) The importance of time-to-market in the HDD industry.²¹⁰ [REDACTED]
[REDACTED]”²¹¹ Mr. Jarosz does not address

²⁰² Lawton Report, ¶ 871 (p. 513). Citing Rick Merritt, “Drive makers’ heads spinning as they juggle transitions,” *EE Times*, September 25, 2006, available at https://www.eetimes.com/document.asp?doc_id=1301641.

²⁰³ Jarosz Tab 2 – Documents Reviewed and/or Relied Upon.

²⁰⁴ Lawton Report, ¶ 464 (p. 277). Citing Mac Thoo, “Seagate introduces Monster Hard Disk,” *Hard Disk Trend Blogspot*, April 27, 2006, available at http://hard-disk-trend.blogspot.com/2006_04_01_archive.html. See also Yoichiro Tanaka, “Perpendicular Recording Technology: From Research to Commercialization,” *Proceedings of the IEEE*, November 2008, available at http://ieeexplore.ieee.org/iee_pilot/articles/96jproc11/jproc-YTanaka-2004309/article.html#authors (“The transition from longitudinal recording to perpendicular recording is the first major recording scheme evolution in the history of the hard disk drive industry.”).

²⁰⁵ Lawton Report, ¶ 897 (p. 525). Citing “Analysis: Perpendicular Versus Horizontal Drive Technology,” *Network Computing*, August 10, 2006, available at <https://www.networkcomputing.com/careers/analysis-perpendicular-versus-horizontal-drive-technology/1584019899/page/0/1>.

²⁰⁶ Jarosz Tab 2 – Documents Reviewed and/or Relied Upon.

²⁰⁷ Jarosz Tab 2 – Documents Reviewed and/or Relied Upon.

²⁰⁸ Lawton Report, ¶ 464 (p. 277). Citing Roger Wood, Hisashi Takano, “Prospects for Magnetic Recording for the next 10 years,” *HGST*, May 10, 2006, Slide 18, available at <http://www.idema.org/wp-content/downloads/1535.pdf>.

²⁰⁹ Jarosz Tab 2 – Documents Reviewed and/or Relied Upon.

²¹⁰ Lawton Report, ¶¶ 258-267 (pp. 143-149).

²¹¹ Lawton Report, ¶ 907 (Figure 11.5) (p. 531). Citing SEA00507193-209, at 202 [REDACTED]

the TTM section of my report, or discuss the importance of time-to-market in the HDD industry.

- e) Seagate’s “**vow never to be caught napping by the next generation of hard-drive data storage technology**”²¹² and its “**bet the business**” strategy²¹³ to use the transition to PMR to achieve a time-to-market advantage—which in September 2007 Seagate reported was as a “**~3 quarters**” TTM lead over its competitors.²¹⁴ According to Dr. Kryder (in an April 2017 interview), Seagate was first to volume production in PMR,²¹⁵ and Seagate’s bet

²¹² Lawton Report, ¶ 551 (p. 328). Citing Bill Davidson, *Breakthrough: How Great Companies Set Outrageous Objectives and Achieve Them*, (Hoboken, NJ: John Wiley & Sons, Inc., 2004), p. 144.

²¹³ Lawton Report, ¶ 872 (p. 513). Citing “Oral History of Mark Kryder (Interviewed by Chris Bajorek)” *Computer History Museum*, April 14, 2017, p. 26 of 51, available at <http://archive.computerhistory.org/resources/access/text/2017/12/102738245-05-01-acc.pdf> (“**Bajorek:** -- Toshiba chose the conventional approach of – may have chosen – of not betting the whole business [on PMR], trying it in a low-risk product. I think you guys at Seagate chose to bet the business on it [PMR] and that was gutsy. **Kryder:** Yes, and it paid off well and the products showed that to us ‘cause we’d had drives for a long time and we were sampling them, and it was working; there wasn’t any question about it.”).

²¹⁴ Lawton Report, ¶ 912 (p. 534). Citing “Analyst and Investor Meeting,” *Seagate*, September 7, 2007, Slide 82 of 119, available at <https://web.archive.org/web/20101129172815/http://seagate.com/staticfiles/docs/pdf/corporate/stx-2007-analyst-day-slides.zip>. See also “STX – Seagate Technology Analyst and Investor Meeting,” *Thomson StreetEvents*, September 7, 2007, p. 21, available at <https://web.archive.org/web/20101129172720/http://seagate.com/staticfiles/docs/pdf/corporate/seagate-tech-analyst-investor-meeting.rtf>.

²¹⁵ Lawton Report, ¶ 872 (p. 513, fn 2479). Citing ²¹⁵ “Oral History of Mark Kryder (Interviewed by Chris Bajorek)” *Computer History Museum*, April 14, 2017, pp. 25-26 of 51, available at <http://archive.computerhistory.org/resources/access/text/2017/12/102738245-05-01-acc.pdf> (“**Bajorek:** And I think in the context of the [HDD] industry that the Seagate team was the one that was either first or one of the first – [to introduce PMR HDDs] **Kryder:** Yes. No. In volume production, Seagate was the first; there’s no question about it. Toshiba brought out a perpendicular drive and put it in a product, a not very good product, a Walkman-style music recorder, and I don’t mean to put them down, but that was what it was used in. Seagate brought out – as soon as they brought out their high-volume drives, like I said, they [Seagate] just started putting it clear across the product line.”). See also Paul Kallender, “Seagate Turns to Perpendicular Recording,” *PCWorld*, July 20, 2005, available at <https://www.pcworld.com/article/121874/article.html> (“However, Seagate isn’t the first company to actually ship drives that use perpendicular recording technology. Toshiba has just started shipping 40GB, 1.8-inch drives for its Gigabeat digital audio players that use the technology and 80GB versions are due soon according to Keisuke Ohmori, a spokesman for Toshiba in Tokyo.”). Compare to “Toshiba Ships ‘Perpendicular’ Disk Drive,” *InformationWeek*, August 17, 2005, available at <https://www.informationweek.com/toshiba-ships-perpendicular-disk-drive/d/d-id/1035275> (“Toshiba Corp. announced Tuesday (Aug. 16) it has started shipping production quantities of a 1.8-inch hard disk drive using perpendicular recording to pack 40-Gbytes of memory storage on a single platter, about 10-Gbytes per platter more than on its existing drives. The higher capacity gives Toshiba an edge as it seeks design wins against lower-capacity but smaller one-inch sized drives in MP3 players and higher capacity 2.5-inch drives in notebook computers. Toshiba’s previous product put 30-Gbytes on a 1.8-inch platter using conventional longitudinal recording. The announcement marks the beginning of the end of a 20-year quest to commercialize perpendicular recording to boost drive capacity. Hitachi Global Storage Technologies and Seagate Technology are expected to ship 2.5- and 3.5-inch drives using perpendicular recording later this year.”).

“paid off well.”²¹⁶ Mr. Jarosz did not review the cited Dr. Kryder April 2017 interview,²¹⁷ Seagate’s September 7, 2007 “Analyst and Investor Day” presentation and transcript,²¹⁸ or Bill Davidson’s 2004 book, *Breakthrough: How Great Companies Set Outrageous Objectives and Achieve Them*.²¹⁹

- f) Seagate’s past experience with the high cost of TTM delays, for example, as recounted by Dr. Kryder in an April 2017 interview: “With the areal density going up so fast, **when they [Seagate] were late by three months they figured they’d lost a billion dollars in sales and that they couldn’t be late anymore.**”²²⁰ Mr. Jarosz did not review the cited Dr. Kryder April 2017 interview.²²¹

81. Mr. Jarosz report does not address any of the foregoing facts. Instead, Mr. Jarosz *ignores* the high stakes circumstances at the time of the hypothetical negotiation in October 2006 and makes the vague, conclusory claim (based on Dr. Fullerton) that available, acceptable non-infringing alternatives (“AANIA”) allegedly existed in October 2006—although Mr. Jarosz does *not* specifically identify any such alleged AANIs.²²² This tactic has been criticized. According to the December 2016 *The Sedona Conference – Commentary on Reasonable Royalty Damages Determinations*, “conclusory assertions of proposed alternatives to the patented technology [] made after the close of fact discovery through a damages expert during the expert discovery period” should be avoided “[t]o prevent expense, delay, and prejudice [to the patentee] during the litigation proceedings, ...”²²³

²¹⁶ Lawton Report, ¶ 872 (p. 504). Citing “Oral History of Mark Kryder (Interviewed by Chris Bajorek)” *Computer History Museum*, April 14, 2017, p. 26 of 51, available at <http://archive.computerhistory.org/resources/access/text/2017/12/102738245-05-01-acc.pdf> (“**Bajorek:** -- Toshiba chose the conventional approach of – may have chosen – of not betting the whole business [on PMR], trying it in a low-risk product. I think you guys at Seagate chose to bet the business on it [PMR] and that was gutsy. **Kryder:** Yes, and it paid off well and the products showed that to us ‘cause we’d had drives for a long time and we were sampling them, and it was working; there wasn’t any question about it.”).

²¹⁷ Jarosz Tab 2 – Documents Reviewed and/or Relied Upon.

²¹⁸ Jarosz Tab 2 – Documents Reviewed and/or Relied Upon.

²¹⁹ Jarosz Tab 2 – Documents Reviewed and/or Relied Upon.

²²⁰ Lawton Report, ¶ 555 (p. 330). Citing “Oral History of Mark Kryder (Interviewed by Chris Bajorek)” *Computer History Museum*, April 14, 2017, p. 27 of 51, available at <http://archive.computerhistory.org/resources/access/text/2017/12/102738245-05-01-acc.pdf> (emphasis added). See also Lawton Report, ¶ 550 (p. 321) Citing Ephraim Schwartz, David Pendery, “Big challenge ahead for Seagate CEO,” *InfoWorld*, July 27, 1998, p. 14 (“[Steven] Luczo [Seagate’s President and COO in July 1998] continued. ‘And so in the course of nine months we probably lost in excess of \$1 billion in revenue.’”).

²²¹ Jarosz Tab 2 – Documents Reviewed and/or Relied Upon.

²²² Jarosz Report, ¶ 152 (pp. 64-65), ¶ 153 (p. 65).

²²³ Andrea Weiss Jeffries, Ed., “The Sedona Conference – Commentary on Reasonable Royalty Determinations,” *The Sedona Conference*, December 2016, p. 44, available at

82. Once again, in this case, Mr. Jarosz ignores his own methodology to determine a reasonable royalty, as described above, and offers no discussion or analysis of Design-Around Costs. The fact that Mr. Jarosz presents no Design-Around Cost analysis is further confirmed by his discussion of the “Cost Approach” at ¶¶ 320-321²²⁴ which simply repeats (verbatim) the vague, conclusory claims stated under the heading “’988 Patent Contribution” at ¶¶ 152-153²²⁵—while offering no analysis. This is another particularly glaring deficiency in Mr. Jarosz’ work.

3. Application of the Market Approach to the Facts of this Case: Availability and Consideration of Comparable Licenses

83. My Initial Report addresses the Market Approach in detail²²⁶ and also addressed Patent Licensing in the HDD Industry in detail and distinguished between one-way commercial licenses for valuable patented technology at the time of major HDD technology transitions—and cross-licenses and settlements,²²⁷ as well as Seagate’s licensing and patent litigation history²²⁸ and the circumstances in October 2006, at the time of the hypothetical negotiation in this case.²²⁹

a) Mr. Jarosz Attempts to “Recycle” his Work and Conclusions from the *Siemens* Case

84. In contrast, Mr. Jarosz more or less attempts to “recycle” his opinion from the *Siemens AG v. Seagate Technology LLC* and presents it again in this case. In *Siemens*, Mr. Jarosz opined that the reasonable royalty would be a lump sum of “no higher than \$10 million.”²³⁰ In this case, Mr. Jarosz opined that the reasonable royalty would “range from \$3 million to \$8 million, and are certainly no greater than \$10 million.”²³¹

https://thesedonaconference.org/system/files/sites/sedona.civicaactions.net/files/private/drupal/filesys/publications/Sedona%20WG9%20Patent%20Reasonable%20Royalty%20Determinations%20%28Dec.%202016%20ed%29_12-15-16.pdf.

²²⁴ Jarosz Report, ¶¶ 320-321 (pp. 136-137).

²²⁵ Jarosz Report, ¶¶ 149-153 (pp. 63-65).

²²⁶ Lawton Report, ¶¶ 939-1004 (pp. 549-558).

²²⁷ Lawton Report, ¶¶ 402-463 (p. 230-275).

²²⁸ Lawton Report, ¶¶ 610-832 (p. 369-494).

²²⁹ Lawton Report, ¶¶ 863-920 (p. 509-540).

²³⁰ Lawton Report, ¶ 806 (p. 480-481). Citing *Siemens AG v. Seagate Technology, LLC*, Case No. 8:06-cv-00788-JVS-AN (C.D. Cal.), Dkt. 783 (Trial Transcript, December 11, 2008 (Trial Day 13) – John Jarosz, Cross), 76:23-77:5.

²³¹ Jarosz Report, ¶ 6 (pp. 2-3).

85. The fact that Mr. Jarosz is attempting to “recycle” his opinion from *Siemens* is clear based on his discussion of the “Footprint of the ’988 Patent,” as discussed above.

b) **Mr. Jarosz’ Opinion is the Same Even Though the Facts and Timing are Substantially Different**

86. Comparing Mr. Jarosz’ reasonable royalty opinion in *Siemens* v. this case, his opinion is more or less the same—even though the facts and timing are substantially different. In addition, the use Seagate made of the ’988 Patent is substantially greater than the use that Seagate made of the Siemens ’838 Patent, as measured by the unit volume of Accused Products. **Table 3.4**, below briefly summarizes the key parameters and establishes that the facts and timing are substantially different.

Mr. Jarosz Damages Opinion	Siemens v. Seagate	LMS v. Seagate
U.S. Patent No.	5,686,838	7,128,988
Patent Issue Date	11/11/1997	10/31/2006
Patented Technology	Read Head - GMR w/AAF	Write Head - PMR
Magnetic Recording Technology	LMR	PMR
Technical Benefits	limited + Seagate claimed it practiced an IBM patent	"de minimis at best"
Economic Benefits	Increases Areal Density; Component cost savings	Increases Areal Density; Component cost savings
Availability of Alternatives	Yes	Yes (not identified)
Date of the Hypothetical Negotiation	09/1999	10/31/2006
Situation Analysis	Evolution in Read Heads; used for limited duration	HDD Inflection Point, Revolution, Most Significant Change in 50 years
Damages Period	08/26/2000-03/2008	04/29/2010-12/31/2017+
Accused HDD Product Sales	\$23,300,000,000	
Accused HDD Unit Shipments	nr	
Accused HDD HGA Shipments (Including TDK)	nr	
Reasonable Royalty Conclusion	no more than \$10 million	\$3 to \$8 million, no more than \$10 million
Reasonable Royalty Conclusion - % of Accused Product Sales	0.0429%	
Reasonable Royalty Conclusion - \$ per HDD		
Reasonable Royalty Conclusion - \$ per HGA		

TABLE 3.4

87. For example, while Seagate’s CFO stated that the economic benefits associated with increasing areal density were costs savings associated with reducing HDD component counts (*i.e.*, fewer heads and media required), Mr. Jarosz did not analyze component costs savings in either the

Siemens case or this case. As such, Mr. Jarosz’ work and opinions in *both* cases are defective—because he failed to analyze the “incremental benefits” associated with the claimed invention of the patent-in-suit.

c) **Mr. Jarosz does not Attempt to Explain or Reconcile his Opinion in this Case to his Opinion in *Siemens***

88. In addition, Mr. Jarosz does not attempt to explain or reconcile his opinion in this case to his opinion in the *Siemens* case. It is clear based on my investigation that Mr. Jarosz reaches the same conclusion because he relied on the same alleged market “comparables” (the 2002 Censtor-Seagate and 1997 Julich Institute-Seagate licenses)—without undertaking any quantitative analysis based on either the Income Approach or Cost Approach. In summary, Mr. Jarosz’ approach and opinion constitute a Seagate-centric “one size fits all” reasonable royalty for HDD head patents that it claims have advantages that are “limited” or “*de minimis* at best.” This is another particularly glaring deficiency in Mr. Jarosz’ work.

4. Payment Structure of the License

89. The payment structure of the license agreement is an issue of fact that will depend on the circumstances of the case.²³² “Lump sums are one species of the broader genus of reasonable royalties, running royalties being another.”²³³ “Subsumed within [the second *Georgia-Pacific*] factor is the question of whether the licensor and licensee would have agreed to a lump-sum payment or instead to a running royalty based on ongoing sales or usage. Significant differences exist between a running royalty license and a lump-sum license.”²³⁴ The payment structure can also impact the amount actually paid, as it may significantly impact risk sharing between the licensor and licensee.²³⁵

²³² See, e.g., Chisum, p. 20-181 – 182.

²³³

HTC Corp. v. Tech. Properties Ltd., No. 5:08-CV-00882-PSG, 2013 WL 4787509, at *1 (N.D. Cal. Sept. 6, 2013).

²³⁴ *Lucent Technologies, Inc., et al. v. Gateway, Inc., et al.*, 580 F.3d 1301, 1326 (Fed. Cir. 2009).

²³⁵ See, e.g., David J. Teece, *Managing Intellectual Capital*, (New York: Oxford University Press, 2002), p. 153 (hereinafter “*Managing Intellectual Capital*”). *Lucent Technologies, Inc., et al. v. Gateway, Inc., et al.*, 580 F.3d 1301, 1326-27 (Fed. Cir. 2009).

90. The determination of “the appropriate royalty structure for rights to the patents in suit ... [have to be] based on sufficient data or information.”²³⁶ The royalty structure “is supportable only if it would have been reasonably foreseeable to the patentee.”²³⁷ Licensing practices in the relevant industry matter. For example, if use royalties are not utilized in the relevant industry, then a reasonable royalty based on such use royalties would not be foreseeable to the patentee and would lack sufficient facts.²³⁸
91. “The fee per unit option could work in cases ... where cost savings stemming from the patented technology are relatively easy to estimate on a per unit basis.”²³⁹ In fact, Mr. Jarosz has presented per unit cost savings analyses in at least one recent case.²⁴⁰
92. In this case, Mr. Jarosz’ assessment of the payment structure of the license is based on limited investigation and mischaracterizes HDD industry licenses and the licenses I address in detail in my Initial Report, ignores key evidence, and presents a Seagate-centric alternative narrative based on limited and selective information.

a) **Running Royalties are Common in Patent Litigation**

93. There is no dispute that running royalties are common in patent litigation. For example:
- In *Carnegie Mellon University v. Marvell Technology Group, Ltd., et al.*, the Federal Circuit “has noted the common (not universal) justification for using per-unit royalties for measuring the value of use of a technology: doing so ties compensation paid to revealed marketplace success, minimizing under- and over-payment risks from lump-sum payments agreed to in advance.”²⁴¹

²³⁶ *XpertUniverse, Inc. v. Cisco Sys., Inc.*, No. CIV.A. 09-157-RGA, 2013 WL 936449, at *3 (D. Del. Mar. 11, 2013).

²³⁷ *Spectralytics, Inc. v. Cordis Corp.*, 650 F. Supp. 2d 900, 918 (D. Minn. 2009), *aff’d in part, vacated in part*, 649 F.3d 1336 (Fed. Cir. 2011).

²³⁸ *Stickle v. Heublein, Inc.* 716 F.2d 1550, 1551 (Fed. Cir. 1983).

²³⁹ Anne Layne-Farrar, “The Patent Damages Gap: An Economist’s Review of U.S. Statutory Patent Damages Apportionment Rules,” *SSRN*, January 2017, pp. 18-19, *available at* https://www.researchgate.net/publication/315811003_The_Patent_Damages_Gap_An_Economist's_Review_of_US_Statutory_Patent_Damages_Apportionment_Rules.

²⁴⁰ *Steves and Sons, Inc. v. Jeld-Wen, Inc.*, (Civil Action No. 3:16-cv-545 (E.D. Va.)) Memorandum Order dated May 10, 2018 (At p. 8: “In this case, Jarosz theorizes, Steves’ [trade secret] misappropriation would allow it to ‘increase the plant’s profitability through a reduction in per skin costs.’ See Jarosz Report ¶ 157. This increased profit would result from Steves’ possession of trade secrets about important manufacturing components like wood thickness, resin, and primer, which would allow Steves to spend less on each element than it would otherwise. ... Using this misappropriated information, a ‘hypothetical Steves plant’ would save about \$0.58 per doorskin, ...”).

²⁴¹ Lawton Report, ¶ 455 (p. 266). *Citing Carnegie Mellon University v. Marvell Technology Group, Ltd., et al.*, 807 F.3d 1283, 1309 (Fed. Cir. 2015).

- In their Spring 2013 article in *Stanford Technology Law Review*, Mr. Jarosz and his Analysis Group co-author, Dr. Chapman, provided a sample of patent cases during the period 1978 to 2012²⁴² based on “opinions issued since 1978 in which a suggested royalty rate was reported for both the patent holder and the infringer.”²⁴³ The sample included 49 cases.
- In electronics industry patent infringement cases **when Mr. Jarosz has been the damages expert for the patentee**, he has opined that the payment structure of the license should be a per unit running royalty²⁴⁴ or a percentage of sales running royalty.²⁴⁵

94. Mr. Jarosz does not explain the inconsistency between the fact that in litigation, reasonable royalties are based on naked patent rights *and* running royalties are common—and his assertion in this case that “royalties for naked patent rights are relatively more likely to be structured as lump-sum payments.”²⁴⁶

b) **Articles Cited by Mr. Jarosz Do Not Establish that “royalties for naked patent rights are relatively more likely to be structured as lump-sum payments”**

95. In this case, Mr. Jarosz attempts to build his alternative narrative based on his counter-factual contention that “royalties for naked patent rights are relatively more likely to be structured as lump-sum payments.”²⁴⁷ For this proposition, Mr. Jarosz does not cite to any of his own papers. Rather, he cites three sources—but provides no pin cites or actual quotes from the articles. In fact, the

²⁴² John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 830.

²⁴³ John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 809.

²⁴⁴ See, e.g., *Ironworks Patents, LLC v. Apple, Inc.*, 255 F. Supp. 3d 513, 528–29 (D. Del. 2017) (Mr. Jarosz was MobileMedia’s (now IronWorks Patents) damages expert and opined that a reasonable royalty for Apple’s use of MobileMedia’s ‘231 Patent would be \$0.25 per iPhone, based on a range of \$0.125 to \$0.83 per iPhone).

²⁴⁵ See, e.g., *Everlight Elecs. Co. v. Nichia Corp.*, No. 12-CV-11758, 2014 WL 4707053, at *4–7 (E.D. Mich. Sept. 22, 2014) (Order Denying Everlight’s *Daubert* Motion to Preclude the Expert Testimony of Nichia’s Technical and Damages Expert [#312], and Granting in Part and Denying in Part Nichia’s Motion to Exclude the Testimony of Everlight’s Technical and Damages Experts [#314] ; Mr. Jarosz was Nichia’s damages expert and opined that the reasonable royalty was 5% of Everlight’s sales of accused LED products.).. *Network Protection Sciences, LLC v. Fortinet, Inc.*, (Case No. C 12-01106 WHA, N.D. Cal.), Dkt. 334 - Omnibus Order Denying Summary Judgment, Denying Motion to Strike Report and Testimony of Dr. Keromytis, and Granting Motion to Strike Report and Testimony of Mr. Jarosz dated September 26, 2014, p. 11 of 14 (“He ended up with a running royalty rate of 4 percent of sales of the accused products (*id.* At 62-64, 75-77).”).

²⁴⁶ Jarosz Report, ¶ 112 (p. 46).

²⁴⁷ Jarosz Report, ¶ 112 (p. 46).

articles Mr. Jarosz cites have little, if any, relevance to the facts of this case, and do not support the stated proposition. Rather, the articles Mr. Jarosz cites establish the opposite:

n) **Christian Bessy, Eric Brousseau, Stephane Saussier, “Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach,” April 2008**—based on “a new source of data (a **French governmental database** designed to observe international technology transfers)”²⁴⁸ The analysis was based on “a sub-sample of 553 [international licensing] contracts [signed by French firms] [between 1904 and 1998²⁴⁹] representative of licensing practices in seven industries”;²⁵⁰ Mechanical Machines and Tools (101 contracts), Automobile and Terrestrial Transportation Material (40 contracts), Electrical Appliances and Machines (34 contracts), Basic Chemicals (58 contracts), Pharmaceutical Products (117 contracts), Domestic Appliances and Dom. Equipment (31 contracts), Agriculture, Fishing, Forestry (35 contracts), and Other (22 industries) (77 contracts).²⁵¹ In 50% of the contracts in the sample, “the French partner is the licensor.”²⁵² Mr. Jarosz does not establish the relevance of this data set to the issues in this case, including but not limited to whether this study includes even a single HDD industry license involving a U.S. licensor. In addition, the article does not support Mr. Jarosz’ contention. For example:

- **At p. 3:** “[T]hose theoretical results [based on “contract theories” and “theoretical literature”] are not in line with actual licensing practices, where royalties are found to be predominant and often used *with* fixed fees.”²⁵³
- **At p. 4:** “On the one hand, licensees prefer to pay royalties instead of lump sum payments because the latter oblige them to make greater efforts in measurement and assessment *ex-ante*, and induce tremendous risks (because of the uncertainty

²⁴⁸ Christian Bessy, Eric Brousseau, Stephane Saussier, “Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach,” p. 1, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

²⁴⁹ Christian Bessy, Eric Brousseau, Stephane Saussier, “Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach,” p. 9, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

²⁵⁰ Christian Bessy, Eric Brousseau, Stephane Saussier, “Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach,” p. 4, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

²⁵¹ Christian Bessy, Eric Brousseau, Stephane Saussier, “Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach,” p. 22, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

²⁵² Christian Bessy, Eric Brousseau, Stephane Saussier, “Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach,” p. 10, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

²⁵³ Christian Bessy, Eric Brousseau, Stephane Saussier, “Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach,” p. 3, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

concerning the actual value of the technology and the licensee's ability to efficiently implement it in his products or processes).²⁵⁴

- **At p. 8:** "Royalty-based compensation structures are likely to be implemented in countries with strong legal protection. In the absence of adequate legal protection, a licensor can either refuse to license his technology, or can minimize uncertainty regarding intellectual property protection by opting for a lump sum compensation to be paid upfront."²⁵⁵
- **At p. 11:** "In our database, 63% of our 553 licensing contracts are based on royalties only. Only 8% are based on lump sum payments only. The remaining part is characterized by a combination of lump sum and royalty payments. As pointed out in the introduction, royalties are more the rule than the exception."²⁵⁶
- **At p. 14:** "Large licensees are therefore everything equal more able than smaller ones to impose to the licensor its first best solutions in terms of payment scheme which is a royalty scheme (as compared to a lump sum) because the licensee shares then the implementation and exploitation risks of the licensee."²⁵⁷
- **At p. 15:** "Our main result is that, as expected, the remuneration regime is sensitive to the nature of the transferred resources: Transferring codified knowledge increases the recourse to royalties, while logically transmitting tacit knowledge raises the probability of implementing lump sum payments."²⁵⁸

o) **Christian Bessy, Eric Brousseau, Camille Chaserant, Regis Coeudroy, "The Diversity of Technology Licensing Agreements and their Causes," *les Nouvelles*, December 2005**—is based on a "questionnaire in collaboration with members of LES (USA & Canada) and LES France. It was sent in the Spring 2001 to 2685 firms, mainly in

²⁵⁴ Christian Bessy, Eric Brousseau, Stephane Saussier, "Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach," p. 4, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

²⁵⁵ Christian Bessy, Eric Brousseau, Stephane Saussier, "Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach," p. 8, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

²⁵⁶ Christian Bessy, Eric Brousseau, Stephane Saussier, "Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach," p. 11, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

²⁵⁷ Christian Bessy, Eric Brousseau, Stephane Saussier, "Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach," p. 14, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

²⁵⁸ Christian Bessy, Eric Brousseau, Stephane Saussier, "Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach," p. 15, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

Europe (35.5 percent), Japan (13.0 percent) and North America (48.5 percent).”²⁵⁹ Only 160 questionnaires (6%) were completed and returned; 70 of the 160 (43%) were from North America.²⁶⁰ The Five (5) industries included in the analysis: Transformation of raw material, Chemical, Equipment Manufacturing and Selling, Services, Other.²⁶¹ Here again, Mr. Jarosz does not establish the relevance of this data set to the issues in this case, including but not limited to whether this study includes even a single HDD industry license involving a U.S. licensor. In addition, the article does not support Mr. Jarosz’ contention. For example:

- **At p. 182:** “The licensee is therefore prone to underestimate the value of the technology and to refuse to pay it through a lump sum payment. However, royalties are not the best solution from the licensor’s point of view. First, it delays the recovering of the innovation and transfer investments made in the past. Second, it raises transactional risks, since the licensor’s revenues will depend upon the efforts made by the licensee to implement and exploit the technology. The licensee also has an incentive to cheat on royalty payments as soon as it has learned what it wanted to learn from the licensor. The compromise about the pricing of knowledge therefore results in additional risks.”²⁶²
- **At pp. 187-188:** “The value of a transferred technology is always uncertain, in particular because it depends on the licensee’s ability to successfully implement it either in its processes or in its products. ... As a result, many uncertainties and information asymmetries prevent parties from easily agreeing on the value of a technological transfer. This explains why, everything being equal, licensees have a strong preference for payments based on royalties, since it allows them to limit the consequences of this uncertainty.”²⁶³

²⁵⁹ Christian Bessy, Eric Brousseau, Camille Chaserant, Regis Coeurdroy, “The Diversity of Technology Licensing Agreements and their Causes,” *les Nouvelles*, December 2005, pp. 179-200, at 179, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=60A9FBF803D12E2641DFB0BBFE7878B9?doi=10.1.1.470.8356&rep=rep1&type=pdf>.

²⁶⁰ Christian Bessy, Eric Brousseau, Camille Chaserant, Regis Coeurdroy, “The Diversity of Technology Licensing Agreements and their Causes,” *les Nouvelles*, December 2005, pp. 179-200, at 179, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=60A9FBF803D12E2641DFB0BBFE7878B9?doi=10.1.1.470.8356&rep=rep1&type=pdf>.

²⁶¹ Christian Bessy, Eric Brousseau, Camille Chaserant, Regis Coeurdroy, “The Diversity of Technology Licensing Agreements and their Causes,” *les Nouvelles*, December 2005, pp. 179-200, at 179, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=60A9FBF803D12E2641DFB0BBFE7878B9?doi=10.1.1.470.8356&rep=rep1&type=pdf>.

²⁶² Christian Bessy, Eric Brousseau, Camille Chaserant, Regis Coeurdroy, “The Diversity of Technology Licensing Agreements and their Causes,” *les Nouvelles*, December 2005, pp. 179-200, at 182, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=60A9FBF803D12E2641DFB0BBFE7878B9?doi=10.1.1.470.8356&rep=rep1&type=pdf>.

²⁶³ Christian Bessy, Eric Brousseau, Camille Chaserant, Regis Coeurdroy, “The Diversity of Technology Licensing Agreements and their Causes,” *les Nouvelles*, December 2005, pp. 179-200, at 187-188, *available at*

- **At p. 189:** “In our survey, 62.1 percent of the contracts specify both lump sum and royalty payments, especially in Europe. If only one of the two payment modes is applied, royalties are more frequent (21.2 percent of the contracts) than lump-sum payments alone (11.6 percent). These figures point out that economic agents have a strong preference for the mixed formula that allows them to balance the disadvantages of both royalties and lump sum.”²⁶⁴

p) **Ines Macho-Stadler, Xavier Martinez-Giralt, J. David Perez-Castrillo, “The Role of Information in Licensing Contract Design,” *Research Policy*, January 1996**—is another foreign study “based on a sample of contracts of transmission of technology between Spanish and foreign firms.”²⁶⁵ This article also undercuts Mr. Jarosz claim. For example, the authors state (at p. 44):

[T]here is also a strong argument for the use of royalties, according to which the main reason for the choice of royalties or fixed payments depends on risk assessment of the potential markets. A fixed fee assigns all the risk to the licensee while royalties share the risk between the contracting firms, yielding an improvement in efficiency.

...

Looking at the licensing contracts signed by firms in practice, we observe that most of them include variable payments.²⁶⁶

c) **Running Royalties Are Used in Commercial Licensing in the Electronics Industry**

96. There is no dispute that running royalties are used in the electronics industry. For example, according to Mr. Jarosz, *et al.*’s study published in December 2002 in *les Nouvelles*, the median royalty rate in the Electronics industry was 4.5%, or 51.3% of the Electronics industry’s average operating profit margin of 8.8%, as shown in **Figure 3.5**,²⁶⁷ below. Mr. Jarosz study was based

<http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=60A9FBF803D12E2641DFB0BBFE7878B9?doi=10.1.1.470.8356&rep=rep1&type=pdf>.

²⁶⁴ Christian Bessy, Eric Brousseau, Camille Chaserant, Regis Coeurdroy, “The Diversity of Technology Licensing Agreements and their Causes,” *les Nouvelles*, December 2005, pp. 179-200, at 189, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=60A9FBF803D12E2641DFB0BBFE7878B9?doi=10.1.1.470.8356&rep=rep1&type=pdf>.

²⁶⁵ Ines Macho-Stadler, Xavier Martinez-Giralt, J. David Perez-Castrillo, “The role of information in licensing contract design,” *Research Policy*, January 1996, pp. 43-57, *available at* <https://www.sciencedirect.com/science/article/pii/0048733394008159>.

²⁶⁶ Ines Macho-Stadler, Xavier Martinez-Giralt, J. David Perez-Castrillo, “The role of information in licensing contract design,” *Research Policy*, January 1996, pp. 43-57, at 44, *available at* <https://www.sciencedirect.com/science/article/pii/0048733394008159> (emphasis added).

²⁶⁷ Robert Goldscheider, John Jarosz, Carla Mulhern, “Use Of The 25 Per Cent Rule In Valuing IP,” *les Nouvelles*, December 2002, pp. 123-133, at 129, *available at* <http://docshare01.docshare.tips/files/3558/35581826.pdf>. *See also* Christof Binder, Ph.D., MBA, Anke Nestler, Ph.D., MBA, “Valuation Of Intangibles And Trademarks—A

on RoyaltySource's database and was confined to "the 1,533 licenses [in RoyaltySource's database] that involved running royalties on sales."²⁶⁸

Rehabilitation Of The Profit-Split Method After Uniloc," *les Nouvelles*, May 2016, Exhibit 1, available at <http://www.lesi.org/les-nouvelles/les-nouvelles-article-of-the-month/les-nouvelles-article-of-the-month-archives/les-nouvelles-article-of-the-month-may-2016> (citing data from Jarosz, *et al.* December 2002 *les Nouvelles* article). See also Scott Nammacher, ASA, CFA [Empire Valuation Consultants, LLC], John Finnerty, Ph.D. [Finnerty Economic Consulting, LLC], Jeffrey Kinrich, CPA/ABV [Analysis Group, Inc.], "Introduction to IP Valuation & Damages Analysis," *National Litigation Support Services' Spring Conference*, June 10, 2005, Slides 24-27, available at http://www.empireval.com/sites/default/files/library/SAN_IP_Valuation_and_Damages_Analysis.pdf (reporting Electronics Industry Royalty Rates (Median, First Quartile and Third Quartile) based on RoyaltySource and RoyaltyStat databases as compiled by Analysis Group: 4.0% (median) based on RoyaltySource (132 agreements); 4.5% (median) based on RoyaltyStat (58 agreements)).

²⁶⁸ Robert Goldscheider, John Jarosz, Carla Mulhern, "Use Of The 25 Per Cent Rule In Valuing IP," *les Nouvelles*, December 2002, pp. 123-133, at 132, available at <http://docshare01.docshare.tips/files/3558/35581826.pdf>.

Figure 6
Royalty Rates and Licensee Profits

Industry	Median Royalty Rate	Average Operating Profits	Royalty as % of Profit Rate
Automotive	5.0%	6.3%*	79.7%
Chemicals	3.0%	11.6%	25.9%
Computers	2.8%	8.0%	34.4%
Consumer Goods	5.0%	16.2%	30.8%
Electronics	4.5%	8.8%	51.3%
Energy & Environment	3.5%	6.6%	52.9%
Food	2.3%	7.9%	28.7%
Healthcare Products	4.0%	17.8%	22.4%
Internet	5.0%	1.0%	492.6%
Machine/Tools	3.4%	9.4%	35.8%
Media & Entertainment	9.0%	-304.5%*	-3.0%
Pharma & Biotech	4.5%	24.5%	17.7%
Semiconductors	2.5%	29.3%	8.5%
Software	7.5%	33.2%	22.6%
Telecom	5.0%	14.1%	35.5%
Total	4.3%	15.9%	26.7%

* Fewer than 5 observations in data set.

FIGURE 3.5

d) Running Royalties Are Used in the HDD Industry

97. The fact that running royalties are used in the HDD industry has been recognized. For example, in *Carnegie Mellon University v. Marvell Technology Group, Ltd., et al.*, the Federal Circuit stated that a per unit royalty for critical technology included in the read channel—a component of an HDD—was based on sufficient evidence:

In common-sense terms, a per-unit royalty here allowed Marvell's payments to vary with the sales its infringing activity produced, which are a good way of valuing what it was worth to Marvell to engage in that activity. Marvell nevertheless

contends that the evidence of the parties' past practices compels a finding that the parties would have agreed to a flat fee, not a per-unit royalty. But because CMU presented sufficient evidence pointing to "economically relevant differences" between those past practices and the circumstances of the negotiation here, neither CMU's expert nor the jury was required to agree with Marvell.

...

In short, there was sufficient evidence to find that a royalty—by which the total dollar (but not per-unit) amount of Marvell's payment would increase with the volume of sales it made based on its use of the technology—was an economically reasonable payment mechanism within the confines of the hypothetical negotiation here.²⁶⁹

98. In *CMU*, the District Court addressed the evidence regarding the payment structure of the license in more detail, noting both Marvell licenses²⁷⁰ and CMU licenses²⁷¹ used running royalties. The District Court found that "CMU adduced sufficient evidence from which a reasonable jury could

²⁶⁹ *Carnegie Mellon University v. Marvell Technology Group, Ltd, et al.*, 807 F.3d 1283, 1309 (Fed. Cir. 2015).

²⁷⁰ *Carnegie Mellon University v. Marvell Technology Group, Ltd, et al.*, (Civil Action No. 2:09-cv-00290-NBF (W.D. Pa.), Dkt. No. 901 – Opinion, September 23, 2013, p. 98 ("The *only* Marvell license submitted into evidence at trial (by CMU no less), was between Marvell Technology Group and DSPG signed in April 2000 (Pl. Ex. 197). According to the licensing arrangement, Marvell was to pay a \$2.1 million fee plus a running royalty between \$0.10 to \$0.40 per unit, after 35 million units are produced.")). *See also* p. 98, fn 98 ("While the Court does not suggest that the DSPG technology is necessarily comparable, it does offer a glimpse at standard contract terms of Marvell and the industry in general. This exhibit was admitted in connection with Dr. Armstrong's testimony, in part, to show that Marvell had entered into running royalty arrangements in the past (Docket No. 682 at 252).").

²⁷¹ *Carnegie Mellon University v. Marvell Technology Group, Ltd, et al.*, (Civil Action No. 2:09-cv-00290-NBF (W.D. Pa.), Dkt. No. 901 – Opinion, September 23, 2013, p. 111 ("As CMU recounts (Docket No. 725 at 7-8), the trial record contains evidence that Marvell has been a party to running royalty licenses in the past. Indeed, Dr. Armstrong has represented that Marvell entered into both lump sum and running royalty agreements in the past. (Docket No. 761 at Jt. Ex. C at 251-252). Ms. Lawton also relied on three license agreements for a running royalty into which Marvell had entered: (1) Hitachi; (2) DSP group (Pl. Ex. 197); and (3) ARM, during her testimony, to which there was no objection by Marvell. (Docket No. 710 at 112-113). The trial record also contains evidence that CMU has been a party to both running royalty and lump sum licenses in the past. First, Ms. Lawton testified that she relied on a Showa Denko license agreement wherein CMU had agreed to a running royalty for a set number of cents per disk and Marvell did not object to such testimony. (Docket No. 710 at 112-113. Second, the 'Highly Speculative Forecast' was entered in evidence over CMU's objection. It contains a list of license agreements to which CMU has been a party and reflects that CMU was a party to running royalty agreements at that time. (Def. Ex. 272). Third, Dr. Wooldridge also testified that CMU had been a party to running royalty agreements in general and as set forth in the 'Highly Speculative Forecast.' (Docket No. 682 at 102, 110)."). *See also* p. 98 ("The *only* Marvell license submitted into evidence at trial (by CMU no less), was between Marvell Technology Group and DSPG signed in April 2000 (Pl. Ex. 197). According to the licensing arrangement, Marvell was to pay a \$2.1 million fee plus a running royalty between \$0.10 to \$0.40 per unit, after 35 million units are produced.")). *See also* p. 98, fn 98 ("While the Court does not suggest that the DSPG technology is necessarily comparable, it does offer a glimpse at standard contract terms of Marvell and the industry in general. This exhibit was admitted in connection with Dr. Armstrong's testimony, in part, to show that Marvell had entered into running royalty arrangements in the past (Docket No. 682 at 252).").

conclude that the parties to the hypothetical negotiation may have agreed to a running royalty in this case.”²⁷²

99. Licensing publications also support the fact that running royalties are typical in the HDD industry. For example, in 2012 (6 years after the date of the hypothetical negotiation), the 2012 Supplement of *Drafting Technology Patent Licensing Agreements* stated:

[S]egments within the computer industry would include **disk drives**, software, or microprocessor technology. These three separate technologies can be licensed separately on terms devised for each area, even at different royalty rates or other financial terms. Each of these segments is an industry in and of itself within the computer industry and would have its own licensing practices and terms. **Royalty rates for patents relating to disk drives** and to microprocessor technology tend to be low—around 2 to 3 percent—due to the fact that both products have become somewhat of a commodity in a highly competitive business.²⁷³

100. In addition, in this case, my Initial Report presents substantial additional evidence that supports my conclusion that running royalties are used in the HDD industry.²⁷⁴ In contrast, Mr. Jarosz largely ignores the extensive discussion in my Initial Report. For example, Mr. Jarosz mischaracterizes HDD industry licensing and the licenses I cite in my Initial Report, ignores LMS (Dr. Lambeth’s) licensing experience and perspective,²⁷⁵ as well as the high-stakes circumstances surrounding the transition to PMR at the time of the hypothetical negotiation in October 2006. In

²⁷² *Carnegie Mellon University v. Marvell Technology Group, Ltd, et al.*, (Civil Action No. 2:09-cv-00290-NBF (W.D. Pa.), Dkt. No. 901 – Opinion, September 23, 2013, p. 111.

²⁷³ Michael J. Lennon, *Drafting Technology Patent License Agreements*, (New York: Wolters Kluwer, 2017), p. 4-11 (2012 Supplement) (emphasis added).

²⁷⁴ See, e.g., Lawton Report, ¶ 419 (pp. 244-245), Dr. Lambeth’s January 21, 1997 memo to Dr. Kryder re: “typical license fees in the the data storage industry” – typically 3% to 7% “of the final selling price of the component”), ¶¶ 447-455 (pp. 263-266), Payment Structure in the HDD Industry), ¶ 658 (p. 394), Rodime Licensing Program – Royalty Rate of 7% of HDD sales price), ¶ 691 (pp. 407-408, Headway: “Through July 3, 1999, we received \$9.3 million from technology transfer fees and \$2.1 million in royalties. We recognized the technology transfer fees as revenue upon achievement of stipulated milestones and recognized royalties based on Seagate sales as reported by Seagate to us.”), ¶ 709 (pp. 416-419), Censtor: “[T]he Company’s license agreements typically provide for on-going royalty payments by the licensees based upon sales products incorporating the Company’s technology, ...”), ¶ 710 (pp. 419-420), Censtor “Royalties” ranging from \$0.30 to \$1.20 per head.), ¶¶ 985-989 (pp. 574-577), Acacia’s Valuation Analysis of the LMS ’988 Patent – 5% Royalty Rate), ¶ 991 (pp. 578-579), Storage Industry Royalty Rates in *Seagate Tech., Inc. v. Commissioner*, the U.S. Tax Court accepted (in 1994) as reasonable that “royalty rates for disk drive or computer accessory technology ranged generally between 1 and 5 percent.” The royalty rate applied to the net sales price of the drive.).

²⁷⁵ Lawton Report, ¶ 43 (pp. 20-21), Dr. Lambeth’s CIT Annual Report for January 1, 1997 to December 31, 1997 re: Licensing of the B2 “Nickel Aluminum” Patent stating: “Along with Casey Porto of TTO [CMU’s Tech Transfer Office], I negotiated the first licensing contract for the use of the U.S. Patent No. 5,693,426 issued December 2, 1997. The final signing of this agreement is pending.”), ¶¶ 419-421 (pp. 244-245), January 21, 1997 Lambeth memo to Kryder).

a footnote, Mr. Jarosz also attempts to dismiss evidence of the running royalty in the 1998 CMU-Showa Denko license for Dr. Lambeth's "B2 'Nickel Aluminum' Patent,"²⁷⁶ notwithstanding the fact that Dr. Lambeth helped negotiate the agreement.²⁷⁷ Dr. Lambeth's "B2 'Nickel Aluminum' Patent" has been described as "one of many groundbreaking data storage innovations developed by the DSSC."²⁷⁸

101. Instead, Mr. Jarosz presents a Seagate-centric alternative narrative based on selective facts.²⁷⁹ Mr. Jarosz claims—without citation—that "while product licenses in this industry may involve running royalties, patent licenses generally include lump sum royalties only."²⁸⁰

e) **Seagate Statement Regarding the Licensing Practice in the HDD Industry is Misleading**

102. It is undisputed that "[v]irtually all the license agreements [in the HDD Industry are] cross-licenses among other members of this industry. We don't have a lot of information about people outside the industry inventing something and trying to license it."²⁸¹ For example:

- a) HGST's John Best and former Seagate CTO, Dr. Mark Kryder, "described the [HDD] industry as a club that shares technology by cross-licensing with one another."²⁸²
- b) In December 2008, in *Siemens AG v. Seagate Technology LLC*, Seagate's Ken Allen testified that Seagate had made it its practice to cross-license other HDD companies in the

²⁷⁶ Jarosz Report, ¶ 105 (p. 40, fn 231). *Stating* "In her report, Ms. Lawton also cited to a July 1998 license agreement between Carnegie Mellon University ("CMU") and Showa Denko KK covering U.S. Patent No. 5,693,426 as an example of an agreement that resulted in a running-royalty license payment in the HDD industry. Lawton Report, ¶ 454. As support for her characterization of the CMU-Showa Denko license, Ms. Lawton cited to her own trial testimony in *Carnegie Mellon University v. Marvell Technology Group, Ltd, et al.* In her testimony, she did not provide any information regarding the terms of the license agreement. Moreover, LMS has not produced the license agreement in this litigation. If allowed, I will assess the relevance and comparability of that license agreement should it be provided to me.").

²⁷⁷ Lawton Report, ¶ 43 (pp. 20-21).

²⁷⁸ Lawton Report, ¶ 46 (pp. 22-23).

²⁷⁹ Jarosz Report, ¶¶ 253-257 (pp. 110-112).

²⁸⁰ Jarosz Report, ¶ 127 (p. 52).

²⁸¹ Lawton Report, ¶ 428 (pp. 249-250, fn 1118). *Citing* *Siemens AG v. Seagate Technology, LLC*, Case No. 8:06-cv-00788-JVS-AN (C.D. Cal.), Dkt. 770 (Trial Transcript, December 17, 2008 (Trial Day 15) – Closing Arguments), 135:21-136:3 (Siemens' Counsel).

²⁸² Lawton Report, ¶ 429 (p. 251). *Citing* Jason Dedrick, Kenneth L. Kraemer, "Who Captures the Value in Technological Innovation? The distribution of benefits in the GMR-based global storage industry," *Penn State University*, September 2013, p. 26, fn 12, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.405.2326&rep=rep1&type=pdf>.

industry.²⁸³

c) In this case, Seagate's 30(b)(6) witness, Robert Pechman, testified that:

- [REDACTED] 284
- [REDACTED] 285
- [REDACTED] 286
- [REDACTED] 87
- [REDACTED] 288
- [REDACTED] 289

²⁸³ Lawton Report, ¶ 632 (p. 378). *Citing Siemens AG v. Seagate Technology, LLC*, Case No. 8:06-cv-00788-JVS-AN (C.D. Cal.), Dkt. 780 (Trial Transcript, November 21, 2008 (Trial Day 6) – Ken Allen (Seagate), Cross), 140:11-140:13. *See also* February 8, 2018 Deposition of Robert Pechman, [REDACTED]

²⁸⁴ February 8, 2018 Deposition of Robert Pechman, [REDACTED]

²⁸⁵ February 8, 2018 Deposition of Robert Pechman, [REDACTED]

²⁸⁶ Lawton Report, ¶ 633 (p. 379). *Citing* February 8, 2018 Deposition of Robert Pechman, [REDACTED]

²⁸⁷ Lawton Report, ¶ 626 (pp. 375-376). *Citing* February 8, 2018 Deposition of Robert Pechman, [REDACTED]

²⁸⁸ Lawton Report, ¶ 626 (pp. 375-376). *Citing* February 8, 2018 Deposition of Robert Pechman, [REDACTED]

²⁸⁹ Lawton Report, ¶ 626 (p. 369). *Citing* February 8, 2018 Deposition of Robert Pechman, [REDACTED]

d) As I noted in my Initial Report,²⁹⁰ in December 2008, in *Siemens AG v. Seagate Technology LLC*, Seagate’s damages expert, John Jarosz, testified that he “closely review[ed] about 40 [Seagate] licenses,”²⁹¹ all of which related to the HDD industry,²⁹² and were in the 1984 through 2003 time period—about 20 years.²⁹³ Mr. Jarosz testified that “[m]ost of those [license agreements] were cross-licenses ...where the two companies were sharing entire sets of patents with one another, not just limited to one or two patents one way or the other.”²⁹⁴

103.

[REDACTED]

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104. I addressed the issue of licensing in the HDD industry²⁹⁶ including cross-licensing in the HDD industry,²⁹⁷ as well as Seagate’s licensing²⁹⁸ in detail in my Initial Report. Mr. Jarosz does not substantively address my in-depth discussion of these subjects, yet he offers the conclusory and unsupported conclusion—without citation—that adopts Seagate’s misleading interrogatory

[REDACTED]

²⁹⁰ Lawton Report, ¶ 634 (p. 379).

²⁹¹ *Siemens AG v. Seagate Technology, LLC*, Case No. 8:06-cv-00788-JVS-AN (C.D. Cal.), Dkt. 768 (Trial Transcript, December 11, 2008 (Trial Day 13) – John Jarosz, Direct), 78:17-78:22.

²⁹² *Siemens AG v. Seagate Technology, LLC*, Case No. 8:06-cv-00788-JVS-AN (C.D. Cal.), Dkt. 768 (Trial Transcript, December 11, 2008 (Trial Day 13) – John Jarosz, Direct), 78:23-78:25.

²⁹³ *Siemens AG v. Seagate Technology, LLC*, Case No. 8:06-cv-00788-JVS-AN (C.D. Cal.), Dkt. 768 (Trial Transcript, December 11, 2008 (Trial Day 13) – John Jarosz, Direct), 79:1-79:5.

²⁹⁴ *Siemens AG v. Seagate Technology, LLC* Case No. 8:06-cv-00788-JVS-AN (C.D. Cal.), Dkt. 768 (Trial Transcript, December 11, 2008 (Trial Day 13) – John Jarosz, Direct), 79:7-79:10.

²⁹⁵ Lawton Report, ¶ 626 (pp. 375-376, fn 1658). *Citing* Seagate’s Third Supplemental Objections and Answers to Lambeth Magnetic Structures, LLC’s First Set of Interrogatories (No. 2) dated March 23, 2018, No. 2 – Third Supplemental Answer, at p. 16.

²⁹⁶ Lawton Report, ¶¶ 402-463 (pp. 230-276).

²⁹⁷ Lawton Report, ¶¶ 422-442 (pp. 246-261).

²⁹⁸ Lawton Report, ¶¶ 621-832 (pp. 374-494).

answer which he paraphrases as follows: [REDACTED]

[REDACTED]²⁹⁹

f) **Mr. Jarosz Ignores or Attempts to Dismiss Key Evidence that Undercuts his Opinion Regarding the Payment Structure of the License**

105. As discussed previously, Mr. Jarosz' investigation was limited, superficial and ignores key documents and information. In determining the payment structure of the license, Mr. Jarosz either ignores or attempts to dismiss key evidence. For example, Mr. Jarosz ignores or attempts to dismiss:

a) Dr. Lambeth's January 21, 1997 memorandum to Dr. Kryder [REDACTED]

[REDACTED]³⁰⁰ Mr. Jarosz ignores this document. While it appears on Mr. Jarosz' Tab 2, he does not cite it in his report.

b) The 1998 CMU-Showa Denko license agreement to Dr. Lambeth's "B2 'Nickel Aluminum' Patent,"³⁰¹ which was based on an upfront fee plus a running royalty based on a royalty per disk.³⁰² Mr. Jarosz attempts to dismiss this license agreement in footnote 231.

c) Rodime's licensing program and 7% of HDD price royalty rate³⁰³ as well as Seagate's propensity to use "hold-up" when dealing with patentees seeking to license their technology to Seagate.³⁰⁴ After years of litigation, Seagate finally settled and paid Rodime \$45 million in January 2000.³⁰⁵ Mr. Jarosz ignores Rodime. Mr. Jarosz Tab 1 does not include any of the Rodime documents cited in my report.

d) Headway's licensing agreement with Seagate which included running royalties based on

²⁹⁹ Jarosz Report, ¶ 138 (p. 57).

³⁰⁰ Lawton Report, ¶¶ 419-421 (pp. 244-246), January 21, 1997 Lambeth memo to Kryder). *Citing* CMU1_002468-470, at 468 (Lambeth Deposition Exhibit 1 – January 21, 1997 Memo from David N. Lambeth to Mark Kryder, Subject: Typical License Fees for Data Storage Patents).).

³⁰¹ Jarosz Report, ¶ 105 (p. 40, fn 231). *Stating* "In her report, Ms. Lawton also cited to a July 1998 license agreement between Carnegie Mellon University ("CMU") and Showa Denko KK covering U.S. Patent No. 5,693,426 as an example of an agreement that resulted in a running-royalty license payment in the HDD industry. Lawton Report, ¶ 454. As support for her characterization of the CMU-Showa Denko license, Ms. Lawton cited to her own trial testimony in *Carnegie Mellon University v. Marvell Technology Group, Ltd, et al.* In her testimony, she did not provide any information regarding the terms of the license agreement. Moreover, LMS has not produced the license agreement in this litigation. If allowed, I will assess the relevance and comparability of that license agreement should it be provided to me.").

³⁰² Lawton Report, ¶ 454 (p. 265).

³⁰³ Lawton Report, ¶ 658 (p. 394).

³⁰⁴ Lawton Report, ¶¶ 649-650 (pp. 389-390), ¶¶ 669-678 (pp. 398-403).

³⁰⁵ Lawton Report, ¶ 648 (pp. 388-389).

sales reported by Seagate.³⁰⁶ Mr. Jarosz attempts to obfuscate the issue regarding Headway. Seagate's document production did not include the April 24, 1998 license agreement which provides for a per head royalty.³⁰⁷ I obtained a redacted version from public sources.

- e) Censtor's licensing agreements "typically provide for on-going royalty payments by the licensees based upon sales of products incorporating the Company's technology," together with an upfront license fee.³⁰⁸

[REDACTED]

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- f) The Censtor-WD license agreement which provides for running royalties of \$0.10 to \$0.40 per head.³¹⁰ While acknowledging that this agreement includes patent rights,³¹¹ Mr. Jarosz attempts to dismiss this license agreement by claiming that it is purportedly a "product supply agreement."
- g) The *Seagate Technology, LLC v. Western Digital Corporation* litigation and arbitration which establishes that HDD recording head technology can drive substantial economic value.³¹²

106.

[REDACTED]

[REDACTED]³¹³ This is a new argument that Mr. Jarosz did not advance in the *Siemens AG v. Seagate Technology LLC* litigation. My detailed discussion of these license agreements in my Initial Report supports my conclusion that Mr. Jarosz is wrong.

³⁰⁶ Lawton Report, ¶ 691 (pp. 407-408), Headway: "Through July 3, 1999, we received \$9.3 million from technology transfer fees and \$2.1 million in royalties. We recognized the technology transfer fees as revenue upon achievement of stipulated milestones and recognized royalties based on Seagate sales as reported by Seagate to us.").

³⁰⁷ Lawton Report, ¶ 639 (pp. 382-383), ¶¶ 689-691 (pp. 406-408).

³⁰⁸ Lawton Report, ¶¶ 709-711 (pp. 416-420), ¶ 1003 (p. 587).

³⁰⁹ Lawton Report, ¶ 723 (p. 418).

³¹⁰ Lawton Report, ¶¶ 638-639 (pp. 382-383). Jarosz Report, ¶ 126 (pp. 51-52).

³¹¹ Jarosz Report, ¶¶ 126-127 (pp. 51-52).

³¹² Lawton Report, ¶¶ 640-643 (pp. 383-386).

³¹³ Jarosz Report, ¶¶ 126-127 (pp. 51-52).

g) **Mr. Jarosz Deliberately Mischaracterizes Patrick Shay's
Deposition Testimony in an Effort to Support his Opinion that
the Payment Structure of the License Would be a Lump Sum**

107. Mr. Jarosz deliberately mischaracterizes the deposition testimony of Seagate's Patrick Shay in an effort to support his opinion that the payment structure of the license in this case would be a lump sum.

108. [REDACTED]

[REDACTED] 314 [REDACTED]

[REDACTED] 315 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 316 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 317 [REDACTED]

[REDACTED]

[REDACTED] 318 [REDACTED]

[REDACTED]

[REDACTED] 319 [REDACTED]

109. Mr. Jarosz cites Mr. Shay's deposition testimony at p. 154, as follows:

³¹⁴ Jarosz Report, ¶ 221 (pp. 98-99) (no citation). *See also* Jarosz Report, ¶ 233 (p. 103) [REDACTED]

³¹⁵ Jarosz Report, ¶ 255 (p. 111) (emphasis added). *Citing* "Shay Deposition, at 154."

³¹⁶ Jarosz Report, ¶ 255 (pp. 111-112).

³¹⁷ Jarosz Report, ¶ 255 (p. 111).

³¹⁸ Jarosz Report, ¶ 367 (pp. 148-149).

³¹⁹ *See, e.g.,* William C. Rooklidge, "Surrejoinder: 3 Problems in 'Clearing Up The Confusion,'" *Law360*, September 9, 2015, *available at* <https://www.law360.com/articles/700424> (Criticizing Mr. Jarosz and his co-author, Dr. Chapman, for use of "sleight of hand" as follows: "In their most recent response article in this spirited series, seeking to 'clear up any confusion [they] may have created,' Michael Chapman and John Jarosz have backpedaled almost to the point of surrender. They valiantly continue to fight on, however, taking refuge in sleight of hand, inapt case law and economic nonsense.").

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 320

110. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 321

111. [REDACTED]

[REDACTED]

- [REDACTED] 22
- [REDACTED] 323
- [REDACTED] 24

112. [REDACTED]

[REDACTED] 325

³²⁰ February 15, 2018 Deposition of Patrick Shay, 154:8-154:25.

³²¹ Jarosz Report, ¶ 132 (p. 55). *Citing* “Shay Deposition, at 154.”

³²² Jarosz Report, ¶ 213 (p. 94) (emphasis added). *Citing* “Shay Deposition, at 154.”

³²³ Jarosz Report, ¶ 255 (p. 111) (emphasis added). *Citing* “Shay Deposition, at 154.”

³²⁴ Jarosz Report, ¶ 367 (pp. 148-149) (emphasis added). *Citing* “Shay Deposition, at 154.”

³²⁵ Lawton Report, ¶¶ 359-372 (pp. 199-212).

113. Mr. Jarosz’ use of “sleight of hand,” however, does not and cannot support his opinion regarding the payment structure of the license in this case. Furthermore, complex “multifaceted supply chains” are typical in the HDD industry and the electronics industry generally. Such alleged complexities are not a defense to patent damages based on running royalties. For example, Mr. Jarosz has opined that Apple should pay per unit running royalty damages of \$0.25 per unit in *MobileMedia v. Apple*. In addition, Mr. Jarosz’ firm, Analysis Group’s webpage, “Selected Case Outcomes,” advertises *Wisconsin Alumni Research Foundation v. Apple Inc.*, noting that it resulted in a damages award of \$234 million.³²⁶ In that case, WARF’s damages expert opined that the payment structure of the license was a running royalty of \$2.74 per unit.³²⁷

³²⁶ “Selected Case Outcomes – *Wisconsin Alumni Research Foundation v. Apple*,” Analysis Group, available at <http://www.analysisgroup.com/insights/cases/wisconsin-alumni-research-foundation-v--apple/>.

³²⁷ See, e.g., Yoriko Morita, “How Valuable Is Your Patent, Really?” *LES*, June 21, 2017, Slides 26-23, at 32, available at https://cdn.ymaws.com/www.lesusacanada.org/resource/collection/BEEDBDF8-DBD0-4DEA-A9AC-D8F50EBD4E5A/2017-06-21_LES_IP_Value_Webinar_v2_notes.pdf (citing Analysis Group webpage: “Independent valuation performed by Analysis Group ... \$2.74/device.” Note, this author mistakenly attributed my damages opinion in *WARF* to Analysis Group, apparently based on Analysis Group’s webpage.)

IV. OVERVIEW OF MR. JAROSZ' WORK AND OPINIONS

114. Mr. Jarosz' opinions and the basis for his opinions are set forth in four (4) sections:

- **II. Background**³²⁸
- **III. Damages Framework**³²⁹
- **IV. Lawton Report**³³⁰
- **V. Jarosz Analysis.**³³¹


115. In remaining sections of this report, I address each of the substantive sections—II., IV. And V.—in Mr. Jarosz' Report. First, however, I provide an overview of Mr. Jarosz' work and opinions.

A. Mr. Jarosz' Assignment

116. Mr. Jarosz stated that he was retained “by Seagate to provide expert analysis and testimony, if necessary, related to the damages that may have been sustained by Lambeth Magnetic Structures LLC (“LMS”) due to Seagate’s alleged infringement of U.S. Patent No. 7,128,988 (the “’988 Patent” or “patent-in-suit”). As part of my assignment, I have been asked to provide my opinions regarding the analyses and conclusions in the April 30, 2018 Expert Report of Ms. Cath[a]rine M. Lawton (“Lawton Report”), which was submitted on behalf of Lambeth.”³³²

B. Mr. Jarosz' Assumptions

117. For purposes of his work in this case, Mr. Jarosz made the following assumptions:

- a) **Validity, Enforceability, and Infringement.** “I have assumed that the ’988 Patent will be found valid, enforceable, and infringed by Seagate.”³³³
- b) **Accused Products.** 

³²⁸ Jarosz Report, ¶¶ 12-81 (pp.4-31).

³²⁹ Jarosz Report, ¶¶ 82-100 (pp.31-39).

³³⁰ Jarosz Report, ¶¶ 101-238 (pp.39-105).

³³¹ Jarosz Report, ¶¶ 239-381 (pp.106-154).

³³² Jarosz Report, ¶ 1 (p. 1).

³³³ Jarosz Report, ¶ 1 (p. 1).

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- c) **Date of First Alleged Infringement.** “In this matter, Seagate had been selling Accused Products – *i.e.*, HDDs that allegedly embody the technology covered by the ’988 Patent - prior to the date on which the ’988 Patent was issued in October 2006.”³³⁵
- d) **Date of the Hypothetical Negotiation.** “Ms. Lawton and I agree that the date of the hypothetical negotiation, therefore, would have been in October 2006.”³³⁶
- e) **Alleged Benefits of the Patents-in-Suit.** “I understand that the ’988 Patent is directed to an ‘improvement of a single magnetic property via the crystal structure of ‘a region of primary materials referred to as the ‘write pole,’” which is a subcomponent within the write head.”³³⁷ “I understand that the ’988 Patent does not teach PMR technology, nor is it even essential to PMR technology; it is one way to slightly fine tune one class of materials that can be used in accomplishing PMR.”³³⁸ Dr. Fullerton “wrote that ‘the purported invention of the ’988 Patent at most had an incremental effect in improving uniaxial anisotropy in write heads,’ and ‘any such improvement would be *de minimis* at best, and uniaxial anisotropy could be derived from multiple other prior art sources, including from shape, pair ordering, and strain.”³³⁹ “The ’988 Patent does not solve issues associated with ‘erase after write’ (or “EAW”), whereby data are unintentionally erased after being recorded on a disk. In fact, many other technologies can be and have been used to address EAW.”³⁴⁰
- f) **Non-Infringing Alternatives.** Because Seagate was already selling Accused Products at the time of the hypothetical negotiation, “the options available to the licensee here (Seagate) to avoid infringement, including the use of alternative technology or the decision to forego the project entirely, usually have narrowed.”³⁴¹ Mr. Jarosz does not identify any alleged acceptable, available non-infringing alternatives. Rather, he states only that “[a]ccording to Dr. Fullerton, even assuming ‘that the invention claimed in the ’988 Patent would ‘contribute’ to uniaxial anisotropy ... any such contribution would be negligible at best—on the order of a few oersteds—and certainly in no way ‘critical’ to having a viable write head for PMR media.”³⁴²
- g) **Claimed Damages Period.** “Therefore, Ms. Lawton and I also agree that, although the

³³⁴ Jarosz Report, ¶ 81 (p. 31).

³³⁵ Jarosz Report, ¶ 97 (p. 38).

³³⁶ Jarosz Report, ¶ 97 (p. 38).

³³⁷ Jarosz Report, ¶ 149 (p. 63).

³³⁸ Jarosz Report, ¶ 152 (p. 64).

³³⁹ Jarosz Report, ¶ 152 (p. 65).

³⁴⁰ Jarosz Report, ¶ 153 (p. 65).

³⁴¹ Jarosz Report, ¶ 165 (p. 69).

³⁴² Jarosz Report, ¶ 356 (p. 146).

hypothetical negotiation would have occurred in October 2006, the appropriate damages period would not begin until April 29, 2010, at the earliest.”³⁴³ “I understand that Seagate contends that LMS failed to comply with the marking requirements of 35 U.S.C. 287, and because of this, LMS cannot claim any pre-suit damages; in which case, the damages period would not begin until April 29, 2016.”³⁴⁴

C. Summary of Mr. Jarosz’s Opinions

118. Mr. Jarosz’ “Summary of Conclusions” states:

Ms. Lawton has concluded that, assuming liability is proven, the appropriate remedy here is a running royalty payment of \$0.30 per head gimbal assembly (“HGA”), which results in reasonable royalty damages in the range of \$315.1 million to \$1.382 billion. Ms. Lawton’s analysis and conclusions are flawed for several reasons. Among other things, she inappropriately dismissed available and relevant evidence from previous licenses and valuations of the ’988 Patent, and mischaracterized or misinterpreted many critical terms of the agreements on which she did rely. In fact, had she accurately evaluated the Censtor Corp.-Hitachi license that she described as the “starting point valuation metric” and is at the core of her analysis, she would have arrived at a lump-sum payment here of \$4,950,000.³⁴⁵

As a result of her flawed analysis, her estimated royalty of \$0.30 for the ’988 Patent – which is directed to a technology allegedly practiced in the write pole, a subcomponent of the write head, which is a subcomponent of an HGA, which is but one of many subassemblies of a hard disk drive – would constitute roughly 90 percent of the total cost of the smallest salable patent practicing unit (the wafer level slider, which contains, among other things, the read and write heads, a heater, and an air bearing surface). And her resulting damages estimate is many multiples of actual amounts that have been paid for the same or similar technology in the real-world marketplace. Ms. Lawton has overstated the economic contribution and value of the ’988 Patent.³⁴⁶

Based upon my review and analysis of the evidence that I have received to date, reasonable royalty damages that should be paid to LMS by Seagate for the alleged infringement of the ’988 Patent range from \$3 million to \$8 million, and are certainly no greater than \$10 million. And the \$3 million may, in fact, be too high in light of the terms and significance of the Julich license.³⁴⁷

³⁴³ Jarosz Report, ¶ 98 (p. 39).

³⁴⁴ Jarosz Report, ¶ 99 (p. 39).

³⁴⁵ Jarosz Report, ¶ 4 (pp. 1-2).

³⁴⁶ Jarosz Report, ¶ 5 (p. 2).

³⁴⁷ Jarosz Report, ¶ 6 (pp. 2-3).

D. Basis of Mr. Jarosz' Opinions

119. Mr. Jarosz summarized the basis for his conclusions as follows:

My conclusions are based upon, among other things,

- Seagate, LMS, and industry license, valuation, and sale agreements;
- The benefits associated with the patented invention;
- Design-around alternatives, and
- Consideration of the *Georgia-Pacific* factors.³⁴⁸

120. Mr. Jarosz' Tab 2, "Documents Reviewed and/or Relied Upon," is a 9-page list that includes the following general categories:

- a) **Bates Documents**
- b) **Case Documents**
- c) **Case Documents in Other Litigation**
- d) **Expert Reports**
- e) **Depositions**
- f) **Analyst Reports, News Articles and Books**
- g) **Case Law**
- h) **Patents and Patent Law**
- i) **Websites**
- j) **Annual Reports and Legal Filings**
- k) **Other.**³⁴⁹

121. Based on Mr. Jarosz' Tab 2, he reviewed a limited number of documents and information. The limitations of Mr. Jarosz' work will be discussed next.

³⁴⁸ Jarosz Report, ¶ 6 (p. 3).

³⁴⁹ Jarosz Tab 2 – Documents Reviewed and/or Relied Upon.

V. MR. JAROSZ’ “BACKGROUND”

122. The “Background” section of the Jarosz Report demonstrates the limited and superficial extent of Mr. Jarosz’ investigation in this case. In my opinion, Mr. Jarosz did not consider all the relevant evidence; in addition: a) he failed to follow his own published methodology (as described above), b) his work and analysis is deficient, and c) his conclusions are neither “reliable,” “rigorous,” nor “robust.”³⁵⁰

A. Mr. Jarosz’ Investigation was Limited and Superficial

123. My Initial Report noted a number of important documents that Seagate did not produce in this litigation—even though at least some of this information was produced in the *Siemens AG v. Seagate Technology, LLC* litigation (in which Mr. Jarosz was Seagate’s damages expert) including, for example:

- a) Seagate Customer Information for the sales of Accused Products,³⁵¹ beyond the limited information for certain customers that Seagate did provide and which it has used in order to attempt to exclude certain units from the royalty base,³⁵²
- b) Seagate Customer Contracts,³⁵³
- c) “Total HGA Demand” data showing Seagate’s internal HGA production volume for the period at least April 29, 2010 through December 31, 2012,³⁵⁴
- d) Damages Reports in the *Seagate Technology, LLC v. Western Digital Corporation* litigation and arbitration,³⁵⁵
- e) Damages Reports in the *Rodime PLC v. Seagate Technology, Inc.* litigation,
- f) April 24, 1998 Headway-Seagate License Agreement,³⁵⁶

³⁵⁰ See also Daniel Siegal, “Priced Out: IP Damages Experts Say Daubert Is A Squeeze,” *Sterne Kessler Goldstein & Fox*, April 27, 2018, available at <https://www.sternekeessler.com/news-insights/news/priced-out-ip-damages-experts-say-daubert-squeeze> (“...Many of us damages experts just hold our breaths with regard to what we think is valid methodology is what the court [Federal Circuit] will think is valid methodology.”)

³⁵¹ Lawton Report, ¶ 19 (p. 10).

³⁵² Jarosz Report, Tab 5.A [22] – [REDACTED]

³⁵³ Lawton Report, ¶ 19 (p. 10).

³⁵⁴ Lawton Report, ¶ 1017 (pp. 592-593).

³⁵⁵ Lawton Report, ¶¶ 640-643 (pp. 383-386).

³⁵⁶ Lawton Report, ¶¶ 689-691 (pp. 406-408).

g) February 1999 White-Seagate Settlement Agreement.³⁵⁷ Seagate did not produce the Settlement Agreement, and Mr. Jarosz stated that “[i]nformation regarding the royalty payment associated with the agreement with Dr. James White was not available because it was specified in a confidential settlement agreement.”³⁵⁸

124. Mr. Jarosz criticizes my analysis based on a number of documents that Seagate failed to produce.³⁵⁹ My Initial Report sets forth reasonable estimates that were necessary because Seagate failed to produce important documents and information.

B. Mr. Jarosz Reviewed Only a Fraction of the Documents and Information Cited in My Initial Report

125. The documents Mr. Jarosz considered are outlined in Tab 2 to the Jarosz Report. Mr. Jarosz does not explain how (or who) selected the documents that he relied upon—or why his investigation did not consider all of the documents and information that I considered.

C. Mr. Jarosz’ “Background” Section is Brief and Ignores the Majority of the Facts Outlined in My Initial Report

126. As noted previously, Mr. Jarosz attempts to build an alternative narrative based on a highly selective and limited number of disjointed facts which confuse and obfuscate the central issues. This is evidenced by Mr. Jarosz’ “Background” section which is brief—less than 28 pages,³⁶⁰ together with an additional 50 pages directed to addressing certain license agreements and information in my report³⁶¹—which taken together, superficially addresses a limited number of subjects. In contrast, the background sections in my Initial Report are extensive—more than 500

³⁵⁷ Lawton Report, ¶¶ 827-830 (pp. 491-493).

³⁵⁸ Lawton Report, ¶ 254 (p. 111, fn 576).

³⁵⁹ See, e.g., Jarosz Report, ¶ 217 (pp. 96-97) (Seagate’s failure to produce HGA Demand data for 2008-2012), ¶ 220 (p. 98) (“Ms. Lawton never should have begun with the HGA demand data in her calculations.”). Jarosz Report, ¶ 224 (p. 100) (“However, data are not available in this matter to identify sales to customers outside the U.S. that are based in the U.S. Therefore, Ms. Lawton sought to estimate sales outside the U.S. that are to U.S.-based OEMs ‘based on the proportion of such sales in the *Siemens AG v. Seagate* litigation.”), ¶¶ 225-231 (pp. 100-103) (At ¶ 231: “This methodology and assumption is unreliable and serves to improperly inflate her royalty base estimates.”). Jarosz Report, ¶ 232 (p. 103) (“To this end, Ms. Lawton used a ‘spreadsheet (SEA03336805) that summarizes [Seagate’s] wafer level slider shipment by calendar year’ and claimed that ‘Seagate had not provided information that would enable [her] to correlate slider shipments to products.’”), ¶ 237 (p. 105) (“Ms. Lawton’s assumption that there is no relationship between the source of a wafer and the ultimate destination of the HGA/HDD in which the wafer was a component is therefore not supported by the data, and could substantially overstate the royalty base.”).

³⁶⁰ Jarosz Report, ¶¶ 12-81 (pp. 4-31).

³⁶¹ Jarosz Report, ¶¶ 108-205 (pp. 42-90).

pages—and comprehensively addresses all of the business and economic facts that are relevant to the determination of the reasonable royalty in this case.³⁶²

³⁶² Lawton Report, pp. 15-540.

VI. “LAWTON REPORT”

127. The “Lawton Report” section of the Jarosz Report demonstrates that Mr. Jarosz made extensive use of “Straw Man Fallacy” in his attempts to rebut my analysis and opinions. Because Mr. Jarosz assumes that the claimed invention of the ’988 Patent has little, if any, value, and he does not address my real opinions, his criticisms do not undermine my analysis, conclusions, and opinions. In addition, Mr. Jarosz attempts to inject information into this case that in some instances he knows is false and irrelevant, and in other instances he knows is false and misleading, or unsupported, confusing, and misleading.

A. Instead of Addressing the Actual Facts and My Opinions, Mr. Jarosz Makes Extensive Use of “Straw Man Fallacy”

128. Instead of addressing the actual facts in this case and my opinions, Mr. Jarosz makes extensive use of “Straw Man Fallacy.” Examples of Mr. Jarosz’ use of “Straw Man Fallacy” are numerous, and include at least the following:

- a) As discussed in detail above, Mr. Jarosz *falsely claims* that I allocated **“the value of all of PMR to the ’988 Patent.”**³⁶³
- b) Mr. Jarosz *falsely claims* that I **“conclude that LMS would and should be able to extract value beyond that contributed by the ’988 Patent because of Seagate’s earlier and substantial commitment to PMR. In economics, this is known as ‘hold-up,’ ...”**³⁶⁴ Mr. Jarosz adds: **“Ms. Lawton opined that the timing of the hypothetical negotiation means that LMS should be able to expropriate rents in excess of the inherent advantages attributable to the use of the patented technology based on the existence of Seagate’s committed investments. ... It is inappropriate to allocate a portion of the value of these investments to the patented technology itself, as Ms. Lawton’s analysis does.”**³⁶⁵ Mr. Jarosz offers no analysis or evidence to support any of these claims—and there is none. For example, Mr. Jarosz does not substantively analyze or even address PMR, Seagate’s alleged “earlier and substantial commitment to PMR,” or what he vaguely describes as “Seagate’s committed investments.” Furthermore, Mr. Jarosz does not identify was “portion of the value of these [Seagate] investments” I purportedly allocated to the ’988 Patent.
- c) Mr. Jarosz *falsely claims* that I **“likely inappropriately invoked the Entire Market Value**

³⁶³ Jarosz Report, ¶ 168 (p. 71).

³⁶⁴ Jarosz Report, ¶ 162 (p. 68).

³⁶⁵ Jarosz Report, ¶ 166 (p. 70).

Rule.³⁶⁶ My Initial Report addresses EMVR and expressly concludes: “given the facts and circumstances of this case as discussed in detail in this report, it is my opinion that the Entire Market Value Rule exception is inapplicable because the payment structure of the license is a running royalty based on a per unit amount.”³⁶⁷

- d) Mr. Jarosz *falsely claims* that I “**appeared to ignore many critical terms of the agreements negotiated between Censtor and its licensees**”³⁶⁸ and “**inappropriately conflated the royalty amounts that Censtor would receive from its related manufacturing subsidiary for sales to its then-current licensees of finished component products that embodied Censtor’s patents, technologies, designs, information, and know how, with the royalty amounts that its licensees actually paid for access to its patents. The range of per-unit royalty values of \$0.30 to \$1.20 presented by Ms. Lawton do not reflect the results of negotiation between Censtor and its licensees.**”³⁶⁹ Mr. Jarosz is attempting to misrepresent the facts. I addressed the Censtor licensing program in detail in my Initial Report,³⁷⁰ which clearly establishes that Censtor’s licenses typically include an upfront license fee and a running royalty based on product sales.³⁷¹ The June 19, 1995 Censtor-CRT license agreement granted CRT certain manufacturing rights while Censtor retained the right to the running royalties that its licensees were obligated to pay.³⁷² The Censtor-CRT license agreement royalty rates reflect the royalty rates outlined in the underlying license agreements—which is clear given that such license agreements are referenced in the Censtor-CRT license agreement. I explained this in detail in my Initial Report.³⁷³
- e) Mr. Jarosz *falsely claims* that I “**adopted one of the inputs to the potential damages model—a royalty rate of [REDACTED]—but ignored other inputs in the model, such as [REDACTED],**”³⁷⁴ and that “**by disregarding [REDACTED] and replacing it with a higher average price (\$8.00 per head) from another source for her valuation, Ms. Lawton seems to conclude that certain of the inputs assumed by Acacia were unreliable. She did not explain why she believed one**

³⁶⁶ Jarosz Report, ¶ 171 (p. 72).

³⁶⁷ Lawton Report, ¶ 1102 (p. 622).

³⁶⁸ Jarosz Report, ¶ 176 (pp. 74-75).

³⁶⁹ Jarosz Report, ¶ 183 (p. 82).

³⁷⁰ Lawton Report, ¶¶ 692-728 (pp. 408-433). *See also* ¶¶ 1001-1004 (pp. 584-587).

³⁷¹ Lawton Report, ¶ 709 (pp. 416-419).

³⁷² Lawton Report, ¶¶ 710-711 (pp. 419-420).

³⁷³ Lawton Report, ¶ 711 (p. 420).

³⁷⁴ Jarosz Report, ¶ 185 (pp. 82-83).

input to be reliable and another to be unreliable.”³⁷⁵ I did not “ignore” any aspect of Acacia’s analysis and nowhere do I state that the *December 2010* Acacia-Samsung analysis or any of its inputs are “unreliable.” In fact, I use the framework of the December 2010 Acacia-Samsung ’988 Patent valuation analysis to estimate LMS’s expectations on October 31, 2006 at the time of the hypothetical negotiation. This fact is crystal clear in my Initial Report. I state: “In my opinion, LMS’s expectations at the time of the October 31, 2006 hypothetical negotiation can be approximated based on the December 31, 2010 Acacia valuation analysis.”³⁷⁶ Certain adjustments are necessary to account for timing differences. As I explain in my Initial Report, in order “[t]o estimate the royalty rate per unit as of *October 31, 2006* [the date of the hypothetical negotiation in this case—more than 4 years *before* the date of the December 31, 2010 Acacia valuation analysis], I relied on Coughlin’s PMR head price in 2006 (\$8.00), and the royalty rate set forth in the Acacia-Samsung valuation analysis [REDACTED].”³⁷⁷

- f) Mr. Jarosz *falsely claims* that **“Ms. Lawton did not appear to sponsor any of the royalty bases that she has offered.”**³⁷⁸ Each of the royalty bases set forth in my Initial Report³⁷⁹ reflect my opinion and is based on the facts detailed in my report. Assuming liability, this data will assist the finder of fact in its determination of the appropriate reasonable royalty.
- g) Mr. Jarosz *falsely claims* that **I included irrelevant material in my report.** Mr. Jarosz states at footnote 307: “In her report, Ms. Lawton included a discussion on “design-ins” and “design wins.” However, this discussion does not appear to pertain to the ’988 Patent or contribute to her reasonable royalty analysis.”³⁸⁰ This section addresses competition in the HDD market centers on the “sales cycle” and “design-ins” “design wins” nature of the market, and “[a]chieving ‘first to qualify’ during U.S.-based qualification process is the goal, and is a significant factor that drives HDD market share, revenue and profits,”³⁸¹ as I explain in detail in this section.³⁸² This section **(VII. “Design-ins” and “Design Wins” Markets)** together with **V. HDD Industry (G. HDD Contracting and Purchasing Cycles)**³⁸³ and **IX. U.S. v. Non-U.S. Sales**³⁸⁴ provide the facts that support my conclusion that Seagate’s worldwide sales constitutes one potential royalty base for a reasonable

³⁷⁵ Jarosz Report, ¶ 193 (p. 578).

³⁷⁶ Lawton Report, ¶ 991 (p. 578).

³⁷⁷ Lawton Report, ¶ 990 (p. 568).

³⁷⁸ Jarosz Report, ¶ 103 (p. 40).

³⁷⁹ Lawton Report, ¶¶ 1009-1039 (pp. 590-599).

³⁸⁰ Jarosz Report, ¶ 137 (p. 58, fn 307).

³⁸¹ Lawton Report, ¶ 504 (p. 301).

³⁸² Lawton Report, ¶¶ 504-525 (pp. 301-311).

³⁸³ Lawton Report, ¶¶ 833-852 (pp. 494-503).

³⁸⁴ Lawton Report, ¶¶ 833-852 (pp. 494-503).

royalty in this case. Mr. Jarosz does not substantively address the facts set forth in any of these sections. Instead, Mr. Jarosz simply alleges that I “did not provide a reliable legal basis, factual basis, or personal experience for her opinion that HGAs manufactured and sold outside the U.S. could still constitute infringing sales if the corporate headquarters of Seagate’s customer is located in the U.S.” such that they can be included in the Royalty Base.³⁸⁵

B. Mr. Jarosz’ Deliberately Misrepresents the December 1994 Censtor-Hitachi License

129. Mr. Jarosz deliberately misrepresents the December 1994 Censtor-Hitachi license. Mr. Jarosz *falsely claims* that the Censtor-Hitachi license “**consisted of a lump-sum payment of \$4,950,000 from Hitachi to Censtor, which included license fees and pre-paid royalties.**”³⁸⁶ Based on this false claim, Mr. Jarosz doubles down and *falsely claims* that had I “**accurately evaluated the Censtor Corp.-Hitachi license that she described as the ‘starting point metric’ and is at the core of her analysis, she would have arrived at a lump-sum payment of \$4,950,000.**”³⁸⁷ These are a blatantly false statements. [REDACTED]

[REDACTED]³⁸⁸

130. The Hitachi license is consistent with Censtor’s “typical” license agreement and included both an up-front license fee *and* use-based royalties.³⁸⁹ In fact, Hitachi paid a *license fee* of \$4,950,000 together with an *additional amount* in pre-paid royalties which is redacted in Censtor’s SEC filings. The facts are set out in detail in my Initial Report which *cites* and *quotes* Censtor’s 10-Q for the fiscal period ended December 31, 1994, filed February 14, 1995 and Censtor’s 1995 10-K/A Amendment No. 2 filed June 11, 1996. My Initial Report (at pp. 409-410) stated: “**Hitachi** [December 19, 1994, paid-up license including an initial [non-refundable] license fee [“of \$4,950,000, which was subject to withholding of a 10% tax by the Japanese authorities”] and

³⁸⁵ Jarosz Report, ¶ 223 (p. 99-100).

³⁸⁶ Jarosz Report, ¶ 176 (p. 75).

³⁸⁷ Jarosz Report, ¶ 378 (pp. 153-154).

³⁸⁸ Jarosz Report, ¶ 371 (p. 151).

³⁸⁹ Lawton Report, ¶ 709 (pp. 416-419) (“[T]he Company’s license agreements typically provide for on-going royalty payments by the licensees based on sales of products incorporating the Company’s technology, ...”). *Citing* 1995 Censtor Corp. 10-K/A Amendent No. 2 filed June 11, 1996, p. 12, *available at* <https://www.sec.gov/Archives/edgar/data/932094/0000891618-96-000844.txt>.

prepaid royalties [that were non-refundable and “(in lieu of running royalties) in the amount of * in U.S. currency payable by December 31, 1994] ...”³⁹⁰ In addition, footnote 1919 (citing Censtor’s 1995 10-K/A Amendment No. 2 filed June 11, 1996) states: “... Hitachi also received options for three years to acquire licenses under the Company’s other future patents and to use Censtor’s know-how in exchange for the payment of certain additional sums **plus royalties at specified rates** which may be discounted and prepaid if the option is exercised by Hitachi before a certain date. ...”³⁹¹

131. This is another example of Mr. Jarosz attempting to inject information into this case that he knows is both false and misleading.

C. Mr. Jarosz’ Censtor Analysis (Tab 15) is Fallacious and Irrelevant

132. Mr. Jarosz’ Censtor Analysis at Tab 15 is fallacious and therefore irrelevant. Mr. Jarosz’ Tab 15 “presents the royalty payments by each of Censtor’s licensees, as well as their estimated volume of HDDs shipped during the year in which the license was granted.”³⁹² Mr. Jarosz then concludes that “[t]he royalty amounts paid by each of Censtor’s licensees do not appear to be directly associated with the licensee’s volume of HDD sales.”³⁹³
133. Mr. Jarosz’ Tab 15 is fallacious because it is premised on the *false assumption* that Censtor’s licensees had actually paid volume-based royalties in the year the license was granted which ranged from February 1991 to March 2002.³⁹⁴ This assumption is clearly false as demonstrated by Censtor’s June 1996 10-K/A which, as set forth in my Initial Report, stated:

While the Company’s license agreements typically provide for on-going royalty payments by the licensees based on sales of products incorporating the Company’s technology, **to date none of the Company’s licensees has commercialized products using the Company’s technology and the Company has received no recurring royalty revenue.**³⁹⁵

³⁹⁰ Lawton Report, ¶ 709 (pp. 416-419) (emphasis added).

³⁹¹ Lawton Report, ¶ 709 (pp. 417, fn 1919) (emphasis added).

³⁹² Jarosz Report, ¶ 181 (p. 80).

³⁹³ Jarosz Report, ¶ 181 (p. 80).

³⁹⁴ Jarosz Report, ¶ 181 (p. 80).

³⁹⁵ Lawton Report, ¶ 709 (pp. 416-419) (emphasis added). *Citing* 1995 Censtor Corp. 10-K/A Amendent No. 2 filed June 11, 1996, p. 12, *available at* <https://www.sec.gov/Archives/edgar/data/932094/0000891618-96-000844.txt>.

134. This is another example of Mr. Jarosz attempting to inject information into this case that he knows is both false and irrelevant.

D. Mr. Jarosz Deliberately Mischaracterizes the December 2010 Acacia-Samsung '988 Patent Valuation Analysis and Deliberately Mischaracterizes My Opinion

135. Mr. Jarosz deliberately mischaracterizes the December 2010 Acacia-Samsung '988 Patent Valuation Analysis by characterizing it—without citation—as a “**preliminary damages estimate**,” and claiming that the [REDACTED] royalty rate is Acacia’s “**assumed**” rate that was allegedly merely a “**placeholder**.”³⁹⁶ Mr. Jarosz also states as a purported “fact”—again without citation—that Acacia’s '988 Patent Valuation Analysis “**did not inform the license payment that actually resulted from the negotiation between Acacia and Samsung**.”³⁹⁷ Mr. Jarosz cites no facts in support of his mischaracterization.
136. In addition, in criticizing my opinion, Mr. Jarosz does not mention key facts—namely, those outlined in detail in my Initial Report:
- a) Dr. Lambeth’s testimony that “[i]n or about early-December 2010, prior to signing the LM-Acacia] contract, Acacia told Dr. Lambeth that ‘settling with Samsung should get something on the order of \$100 million’ for [patent] rights in the U.S.”³⁹⁸ Dr. Lambeth further testified that “[t]he \$100 million that [Acacia] had based their statement on I believed was based on that fraction and only the fraction that was in the United States. But that was their statement, not mine.”³⁹⁹
 - b) The March 2, 2011 Acacia-Samsung agreement breached Acacia’s contract with LMS,⁴⁰⁰ because it violated the most important restriction—the “anti-bundling” restriction, which prohibited Acacia from bundling the '988 Patent with other patents.⁴⁰¹
 - c) The “problems” at Acacia at the time the Acacia-Samsung agreement was negotiated.⁴⁰²
 - d) The value Acacia *allocated* to the '988 Patent “seriously undervalued the Lambeth Patents.”⁴⁰³

³⁹⁶ Jarosz Report, ¶ 192 (p. 85).

³⁹⁷ Jarosz Report, ¶ 192 (p. 85).

³⁹⁸ Lawton Report, ¶ 134 (pp. 66-67).

³⁹⁹ Lawton Report, ¶ 135 (p. 67).

⁴⁰⁰ Lawton Report, ¶¶ 142, 144 (pp. 71, 73). *Compare to* Jarosz Report, ¶¶ 75-76 (pp. 28-29).

⁴⁰¹ Lawton Report, ¶ 134 (pp. 66-67). *Compare to* Jarosz Report, ¶¶ 75-76 (pp. 28-29).

⁴⁰² Lawton Report, ¶¶ 139-141 (pp. 69-71).

⁴⁰³ Lawton Report, ¶ 143 (p. 71). *Compare to* Jarosz Report, ¶ 75 (pp. 28-29).

137. Mr. Jarosz *falsely claims*, again without citation, that I “**apparently ignored the license that resulted from an actual negotiation between Samsung and Acacia, and Acacia’s allocation of the value attributable to the ’988 Patent.**”⁴⁰⁴ Here again, Mr. Jarosz deliberately mischaracterizes my opinion. In my Initial Report, I opined that Acacia’s [REDACTED] *allocation [to the ’988 Patent] ... does not represent a ‘valuation’ of the ’988 Patent*” and expressly stated the basis for my opinion.⁴⁰⁵
138. This is another example of Mr. Jarosz attempting to inject information into this case that he knows is both false and misleading.

E. Mr. Jarosz’ Opinion Regarding the Effective Rate of the LMS-TDK Settlement Agreement Ignores Key Facts and is Defective and Misleading

139. Mr. Jarosz’ opinion regarding the effective rate of the LMS-TDK settlement agreement ignores key facts and is defective and misleading. In my Initial Report, I addressed in detail the March 30, 2017 LMS-TDK Settlement and Patent License Agreement.⁴⁰⁶ I concluded that “the March 30, 2017 LMS-TDK settlement is *not* a relevant benchmark for establishing a reasonable royalty for Seagate’s use of the claimed invention of the ’988 Patent in this case” for the reasons that I explained in detail,⁴⁰⁷ which address “the similarities and differences between those [settlement] negotiations and the hypothetical negotiation in this case.”⁴⁰⁸

1. Mr. Jarosz’ Responses are Speculative and Unsupported

140. In contrast, Mr. Jarosz does not substantively address the “similarities and differences between those [settlement] negotiations and the hypothetical negotiation in this case.”⁴⁰⁹ While Mr. Jarosz attempts to respond to my reasoning, his responses are largely speculative and unsupported argument that is injected with certain irrelevant facts.⁴¹⁰ For example, while Mr. Jarosz does not dispute that only limited discovery was available in the LMS-TDK case, Mr. Jarosz stated that as

⁴⁰⁴ Jarosz Report, ¶ 192 (p. 85).

⁴⁰⁵ Lawton Report, ¶ 143 (p. 71).

⁴⁰⁶ Lawton Report, ¶¶ 960-973 (pp. 559-567).

⁴⁰⁷ Lawton Report, ¶ 963 (pp. 560-562).

⁴⁰⁸ Lawton Report, ¶ 954 (p. 556).

⁴⁰⁹ Lawton Report, ¶ 954 (p. 556).

⁴¹⁰ Jarosz Report, ¶¶ 273-279 (pp. 117-120).

of “March 30, 2017, there was no litigation between the parties – TDK had been dismissed with prejudice.”⁴¹¹ This fact is irrelevant given that the settlement resulted less than one month after the March 1, 2017 dismissal⁴¹²—and I understand that LMS could have refiled the litigation in another venue. Mr. Jarosz simply argued that “while the extent of information produced in this case regarding the likelihood of infringement may inform the ultimate settlement amount, it does not necessarily indicate that the ultimate settlement amount is completely irrelevant. Further, there is no evidence in this case that the stage of litigation (or lack thereof) biased the result downward, and Ms. Lawton has not shown that to be the case.”⁴¹³ This claim is both factually unsupported and economically unsupportable. As a result of the dismissal—LMS’s potential damages period was truncated by more than 2 years. Based on the 2014 litigation, the damages period could be as long as **November 6, 2008** through August 22, 2022 (the expiration date of the ’988 Patent). As a result of the dismissal, the earliest potential damages start date would **March 31, 2011**—assuming a litigation was filed that day.

2. Mr. Jarosz’ Contention that Value of the Use of the Claimed Invention of the ’988 Patent to TDK and Seagate is Not Substantially Different is Unsupported and Economically Unsupportable

141. Mr. Jarosz also makes the unsupported and economically unsupported contention that “there is no reason that Seagate’s vertically integrated production strategy would result in substantially different valuations for the ’988 Patent.”⁴¹⁴ As explained in detail in my Initial Report, Seagate “**bet the business**” on the HDD market’s transition to PMR and achieved an \$18 per HDD cost savings benefit and increased market share as a result. Given TDK’s position in the supply chain as a merchant head supplier, TDK did not have an ability to monetize the claimed invention of the ’988 Patent in the same way Seagate did. [REDACTED]

[REDACTED] 415

⁴¹¹ Jarosz Report, ¶ 275 (p. 118).

⁴¹² Lawton Report, ¶ 963 (p. 560).

⁴¹³ Jarosz Report, ¶ 275 (p. 118).

⁴¹⁴ Jarosz Report, ¶ 277 (p. 119).

⁴¹⁵ February 15, 2018 Deposition of Patrick Shay, 141:12-142:1 [REDACTED]

3. Mr. Jarosz’ “Corrected” LMS-TDK Effective Royalty Rate Work is both Unsupported and Defective

142. Finally, Mr. Jarosz’ “corrected” LMS-TDK effective royalty rate work is defective. Mr. Jarosz claims that he “corrected” my calculation and that based on his “corrected effective per-unit royalty, [he] calculate[s] a nominal royalty range of \$5.1 to \$10.2 million.”⁴¹⁶ Mr. Jarosz claims that I allegedly “failed to grasp the significance of the fact that the LMS-TDK agreement included a license to the ’988 Patent *and* its foreign equivalents.”⁴¹⁷ While Mr. Jarosz does not dispute that the majority of TDK’s heads are manufactured in Japan—and not the U.S.,⁴¹⁸ he alleges that “[t]o the extent that TDK’s products would have allegedly infringed the foreign equivalents versus the ’988 Patent itself, then it would simply reflect a different distribution of value within the portfolio of patents to which TDK was granted access through the agreement.”⁴¹⁹
143. Mr. Jarosz agrees with my conclusion that the effective royalty rate calculation would be based on TDK’s estimated head shipments during the period April 1, 2011 (6 years prior to the earliest date that LMS could file a new lawsuit against TDK) and end on August 22, 2022 (the date the ’988 Patent expires).⁴²⁰ This reflects the longest potential damages period. To the extent that the damages period does not include pre-suit damages (which Seagate has argued in this case), the damages period would be much shorter: March 31, 2017 to August 22, 2022. Mr. Jarosz, however, offers no calculation based on an alternative assumption of a shorter damages period—that matches Seagate’s contention in this case.
144. My analysis focuses on the scope of TDK’s alleged infringement in the U.S. and its U.S. head shipments, whereas Mr. Jarosz contends that analysis should be based on TDK’s worldwide head shipments—this is the key difference.
145. There are a number of defects in Mr. Jarosz’ reasoning and work:
- a) Mr. Jarosz ignores the fact that this litigation involves only the U.S. Patent—and not the foreign counterparts.

⁴¹⁶ Jarosz Report, ¶ 280 (p. 120).

⁴¹⁷ Jarosz Report, ¶ 280 (p. 120).

⁴¹⁸ Lawton Report, ¶ 973 (Table 9.1) (p. 567).

⁴¹⁹ Jarosz Report, ¶ 276 (p. 119).

⁴²⁰ Jarosz Report, Tab 9.

- b) Mr. Jarosz offers no analysis or opinion regarding the value of the '988 U.S. Patent v. the foreign counterparts.
- c) Instead, without offering any facts or discussion, Mr. Jarosz simply assumes that LMS's foreign patent in Japan is *significantly* more valuable than the U.S. '988 Patent based on the location of head manufacture. This is because until TDK's restructuring in 2018, the majority of TDK's HDD head production was at its Asama plant in Saku City, Nagano Prefecture, Japan.⁴²¹ Mr. Jarosz' conclusion that the Japan patent accounts for the majority of the value TDK realized through its infringement is contradicted by the fact that LMS filed litigation in the U.S.—and not Japan.
- d) Mr. Jarosz simply assumes that LMS would have access to the information needed to prove infringement in Japan. Given the nature of the claimed invention of the '988 Patent and limited discovery available in Japan, it is likely that LMS would have difficulty gaining access to the information needed to prove TDK's infringement in Japan.⁴²²
- e) Mr. Jarosz simply assumes that the value of patents and the patent damages available in Japan and the U.S. are the same. Mr. Jarosz offers no basis in support of his unstated assumption, and his assumption is contradicted by the available studies. Numerous studies establish that there is far less patent litigation in Japan than in the U.S. due to a variety of challenges associated with patent enforcement in Japan.⁴²³ There are key differences

⁴²¹ Lawton Report, ¶ 970 (p. 566). See also "TDK's Site Report 2007 – Asama Techno Factory," *TDK CSR Report 2007*, 2007, available at https://www.global.tdk.com/csr/report/report07_e/sitereport/sit10800.html ("Located in the northernmost part of rapidly growing Sakudaira, ... the site started operations in 1986 as a production site for wafers used in thin-film magnetic heads for TDK HDD.").

⁴²² See, e.g., Yasufumi Shiroyama, "Japan – The Patent Litigation Law Review – Edition 1," *The Law Reviews*, December 2017, available at <https://thelawreviews.co.uk/edition/the-patent-litigation-law-review-edition-1/1151087/japan>. See also Jason S. Shull, Yuko Hara, Taku Oomori, "Patent Enforcement in Japan As Part of a Global Litigation Strategy," *IP Litigator*, Vol. 14, No. 2, July/August 2008, pp. 21-25, at 21, available at https://bannerwitcoff.com/wp-content/uploads/2016/08/Shull-Patent-Enforcement_in_Japan.pdf ("[U]nlike the US Systems, Japan does not have extensive procedures for pretrial discovery after the lawsuit is filed. Patent owners are therefore resigned to gathering the necessary evidence of infringement before filing suit."). Christoph Rademacher, "The Enforcement of Patent Rights in Japan," *IIP Bulletin*, Vol. 20, 2011, p. 6, available at https://www.iip.or.jp/e/e_summary/pdf/detail2010/e22_09.pdf ("While the evidence collection system [in Japan] has been subject to fundamental revisions in the last years, it is impossible to collect non-public evidence that is in the possession of the defendant without the defendant's consent or a court order issued after a hearing. Especially in the case of infringement of process patents, onsite evidence collection is crucial for a determination of the facts. However, as such onsite [sic – onsite] inspection is practically impossible without giving prior notice, the defendant always has the opportunity to conceal certain steps of a production process prior to an inspection.").

⁴²³ See, e.g., Kazuhiro Yamaguchi, "Japanese Patent Litigation and Its Related Statistics – Current Environment and Future Agenda," *AIPPI Journal*, May 2016, pp. 128-142, at 128, 130, 138, available at <https://www.soei.com/en/wp-content/uploads/sites/2/2016/07/Japanese-Patent-Litigation-and-Its-Related-Statistics.pdf> (At 128: "Despite such a significant market size and large number of patent applications and registrations, Japan is far behind the U.S. and China in terms of the number of patent infringement lawsuits as shown in Figure 1." At p. 130: "The JPO report presenting the results of an interview survey [published in February 2014] pointed out the following factors as the reasons why the number of patent infringement lawsuits is small in Japan. (1) Difficulty in obtaining an easily enforceable patent right, (2) High risk of patentee's losing a lawsuit, (3) Low damages, (4) High litigation costs, (5) Tendency of Japanese people to avoid litigation." At p. 138:

“between the Japanese system and the U.S. system such as easy access to evidence in the discovery process, the existence of the jury system and treble damages for willful infringement.”⁴²⁴ “Unlike in the United States, there is no ‘discovery’ in Japan and each party has to collect its own evidence.”⁴²⁵ The bottom line is that “there is a large difference between Japan and the U.S. in terms of the awarded damages.”⁴²⁶ For example, “regarding the [patent damages] judgments in 2014, the amount awarded in the U.S. is 33 to 34 times higher than the largest amount awarded” in Japan.⁴²⁷

“[R]egarding the judgments in 2014, the amount awarded in the U.S. is 33 to 34 times higher than the largest amount awarded by the District Court for 2011 (WA) 16885.”). See also Jason S. Shull, Yuko Hara, Taku Oomori, “Patent Enforcement in Japan As Part of a Global Litigation Strategy,” *IP Litigator*, Vol. 14, No. 2, July/August 2008, pp. 21-25, at 22, available at https://bannerwitcoff.com/wp-content/uploads/2016/08/Shull-Patent_Enforcement_in_Japan.pdf (“The likelihood that an accused infringer will allege this defense [invalidity], and that Japanese courts will judge the asserted patent invalid, is high. For example, a survey of Japanese court decisions published from January 1, 2005, to December 31, 2006, revealed the following: In 65 (about 80 percent) of the 84 district court cases filed, the defense of invalidity was alleged. In 38 of those 65 cases (nearly 60 percent), the district court determined that the asserted patent was invalid.”). Toshiko Takenaka, “Patent Infringement Damages in Japan and the United States: Will Increased Patent Infringement Damage Awards Revive the Japanese Economy?” *Washington University Journal of Law & Policy*, January 2000, pp. 309-370, at 335 (“The reasonable royalty functions as a minimum compensation for infringement; although, the statute does not expressly provide for this. However, it is difficult for patentees to persuade courts to grant the full amount of reasonable royalty requested by the patentee. This difficulty is clearly indicated by the low proportion of cases (31.1%) where the requested amount was fully awarded. The amount of royalty actually awarded on average is much less (63%) than the amount requested by patentees. One reason for the low royalty award is the difficulty of establishing the number of infringing products sold by the defendant. The same problem of collecting evidence, explained earlier with respect to lost profits, also applies to the proof of the defendant’s sales. Because of the lack of proof, courts often allow recovery of a royalty only with respect to the number of sales that infringers admit.”).

⁴²⁴ Kazuhiro Yamaguchi, “Japanese Patent Litigation and Its Related Statistics – Current Environment and Future Agenda,” *AIPPI Journal*, May 2016, pp. 128-142, at 138, available at <https://www.soeci.com/en/wp-content/uploads/sites/2/2016/07/Japanese-Patent-Litigation-and-Its-Related-Statistics.pdf>.

⁴²⁵ Yasufumi Shiroyama, “Japan – The Patent Litigation Law Review – Edition 1,” *The Law Reviews*, December 2017, available at <https://thelawreviews.co.uk/edition/the-patent-litigation-law-review-edition-1/1151087/japan>. See also Jason S. Shull, Yuko Hara, Taku Oomori, “Patent Enforcement in Japan As Part of a Global Litigation Strategy,” *IP Litigator*, Vol. 14, No. 2, July/August 2008, pp. 21-25, at 21, available at https://bannerwitcoff.com/wp-content/uploads/2016/08/Shull-Patent_Enforcement_in_Japan.pdf (“[U]nlike the US Systems, Japan does not have extensive procedures for pretrial discovery after the lawsuit is filed. Patent owners are therefore resigned to gathering the necessary evidence of infringement before filing suit.”). Christoph Rademacher, “The Enforcement of Patent Rights in Japan,” *IIP Bulletin*, Vol. 20, 2011, p. 6, available at https://www.iip.or.jp/e/e_summary/pdf/detail2010/e22_09.pdf (“While the evidence collection system [in Japan] has been subject to fundamental revisions in the last years, it is impossible to collect non-public evidence that is in the possession of the defendant without the defendant’s consent or a court order issued after a hearing. Especially in the case of infringement of process patents, onsite evidence collection is crucial for a determination of the facts. However, as such onsite [sic – onsite] inspection is practically impossible without giving prior notice, the defendant always has the opportunity to conceal certain steps of a production process prior to an inspection.”).

⁴²⁶ Kazuhiro Yamaguchi, “Japanese Patent Litigation and Its Related Statistics – Current Environment and Future Agenda,” *AIPPI Journal*, May 2016, pp. 128-142, at 138, available at <https://www.soeci.com/en/wp-content/uploads/sites/2/2016/07/Japanese-Patent-Litigation-and-Its-Related-Statistics.pdf>.

⁴²⁷ Kazuhiro Yamaguchi, “Japanese Patent Litigation and Its Related Statistics – Current Environment and Future Agenda,” *AIPPI Journal*, May 2016, pp. 128-142, at 138, available at <https://www.soeci.com/en/wp-content/uploads/sites/2/2016/07/Japanese-Patent-Litigation-and-Its-Related-Statistics.pdf>.

146. This is another example of Mr. Jarosz attempting to inject information into this case that he knows is based on unsupported assumptions and is misleading.

F. **Mr. Jarosz' Reference to [REDACTED] and Operating Profit Margin is Largely Irrelevant Because the Incremental Benefit of the Claimed Invention of the '988 Patent is *Cost Savings***

147. Mr. Jarosz refers to alternative financial metrics—namely, SSPPU and Seagate’s operating profit margin—which are largely irrelevant because Mr. Jarosz’ claimed SSPPU is [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

1. SSPPU

148.	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED] 428
149.	[REDACTED] 429 [REDACTED] 430 [REDACTED]
	[REDACTED] 431

⁴²⁸ February 16, 2018 Deposition of Jesse Yang, 33:20-34:7.

⁴²⁹ February 15, 2018 Deposition of Patrick Shay, 134:16-134:17.

⁴³⁰ February 15, 2018 Deposition of Patrick Shay, 65:13-65:18

⁴³¹ February 16, 2018 Deposition of Jesse Yang, 195:2-195:15

150.

[REDACTED]
[REDACTED] 432 [REDACTED] 433
[REDACTED] 434

151.

[REDACTED]
[REDACTED] 435 [REDACTED]
[REDACTED] 436 [REDACTED]
[REDACTED] 437 [REDACTED]

[REDACTED]

⁴³² February 15, 2018 Deposition of Patrick Shay, [REDACTED]

⁴³³ February 15, 2018 Deposition of Patrick Shay, [REDACTED]
[REDACTED]

⁴³⁴ February 15, 2018 Deposition of Patrick Shay, [REDACTED]
[REDACTED]

⁴³⁵ Jarosz Report, [REDACTED]

⁴³⁶ February 16, 2018 Deposition of Jesse Yang, [REDACTED]
[REDACTED]

⁴³⁷ See, e.g., February 16, 2018 Deposition of Jesse Yang [REDACTED]
[REDACTED]

Age Group	Number of Respondents
18-24	438
25-34	439
35-44	440
45-54	441
55-64	442
65-74	443

⁴³⁸ February 15, 2018 Deposition of Patrick Shay

⁴³⁹ February 15, 2018 Deposition of Patrick Shay, [REDACTED]

⁴⁴⁰ See, e.g., February 15, 2018 Deposition of Patrick Shay, [REDACTED]

⁴⁴¹ February 15, 2018 Deposition of Patrick Shay [REDACTED]

⁴⁴² February 15, 2018 Deposition of Patrick Shay.

⁴⁴³ February 15, 2018 Deposition of Patrick Shay.

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For this reason, Mr. Jarosz' opinion regarding the alleged SSPPU provides little, if any, insight regarding the reasonable royalty in this case.

152. Second, the incremental benefit of the claimed invention of the '988 Patent is *cost savings*. Mr. Jarosz does not dispute the fact that the incremental benefit of the claimed invention of the '988 Patent is *cost savings*,⁴⁴⁷ or my opinion that the "range of cost savings that Seagate expected to realize based on the reduction in PMR heads required to achieve a given HDD capacity point compared to the number of heads required in a reasonably comparable drive" is \$4.30 to \$12.00.⁴⁴⁸ In addition, Mr. Jarosz declined to present his own incremental benefit analysis. Mr. Jarosz asserts only that my "**allocation**" of the foregoing cost savings to the claimed invention of the '988 Patent is allegedly "**improper**" and "**overestim[es] the value of the '988 Patent.**"⁴⁴⁹ As such, any reference to a purported *revenue* (i.e. Seagate's intercompany transfer price) metric—such as Mr. Jarosz' alleged SSPPU—is irrelevant in view of the facts of this case.
153. Third, in certain cases, like this case, reference to the SSPPU "would likely artificially deflate the jury's damages calculations" "when the patented technology is not the sole driver of demand but

⁴⁴⁴ February 15, 2018 Deposition of Patrick Shay.

⁴⁴⁵ February 15, 2018 Deposition of Patrick Shay.

⁴⁴⁶ See, e.g., *Commonwealth Sci. & Indus. Research Organisation v. Cisco Systems, Inc. (CSIRO I)*, No. 6:11-CV-343, 2014 WL 3805817, at *11 (E.D. Tex. July 23, 2014), *vacated*, 809 F.3d 1295 (2015), *cert. denied*, 136 S. Ct. 2530 (2016) ("The benefit of the patent lies in the idea, not in the small amount of silicon that happens to be where that idea is physically implemented. Compounding this problem is the depression of chip prices in the damages period resulting from rampant infringement which occurred in the wireless industry. ... Basing a royalty solely on chip price is like valuing a copyrighted book based only on the costs of the binding, paper, and ink needed to actually produce the physical product. While such a calculation captures the cost of the physical product, it provides no indication of its actual value.").

⁴⁴⁷ Jarosz Report, ¶¶ 168-169 (pp. 71-72).

⁴⁴⁸ Jarosz Report, ¶ 169 (p. 71).

⁴⁴⁹ Jarosz Report, ¶¶ 168-169 (pp. 71-72).

nonetheless contributes more value to its users than is captured in the component in which it is physically or technically implemented.”⁴⁵⁰

2. Seagate’s Gross Margin and Operating Profit Margin

154. Seagate’s Jesse Yang did not know whether Seagate tracks profitability of its HDD business on a product-by-product basis.⁴⁵¹
155. Mr. Jarosz presents data that compares Seagate’s profitability before the alleged infringement FY2002-2006 (the “*pre*-period”) and during the alleged infringement FY2007-2017 (the “*post*-period”). Seagate’s FY2006 ended on **June 30, 2006**—and, therefore, FY2006 should be included in the *pre*-period.
156. Mr. Jarosz refers to Seagate’s operating profit margin claiming that Seagate’s expected HDD head cost savings of \$4.30 to \$12.00 per drive is allegedly undercut by the fact that “Seagate’s operating margin actually *deteriorated* from 8.4 percent before fiscal year 2006 to 8.2 percent after.”⁴⁵² This result, however, reflects Mr. Jarosz’ gerrymandering, and the fact that when reporting operating margin, he includes FY2006 in the *post*-period. In contrast, when reporting gross margin, Mr. Jarosz includes FY2006 in the *pre*-period, and acknowledges that Seagate’s average gross margin *increased* from 24.3% during the fiscal years 2002 through 2006, to 24.9% during the fiscal years 2007 through 2017.⁴⁵³
157. **Table 6.1**, below, summarizes Seagate’s reported gross margin and operating margin during the *pre*-period and the *post*-period based on Mr. Jarosz **Tab 3**. Contrary to Mr. Jarosz’ contentions, **Table 6.1** establishes that Seagate’s gross margin and operating profit margin *both increased* during the period FY2007 through FY2017.

⁴⁵⁰ Anne Layne-Farrar, “The Patent Damages Gap: An Economist’s Review of U.S. Statutory Patent Damages Apportionment Rules,” *SSRN*, January 2017, pp. 12-13, *available at* https://www.researchgate.net/publication/315811003_The_Patent_Damages_Gap_An_Economist's_Review_of_US_Statutory_Patent_Damages_Apportionment_Rules.

⁴⁵¹ February 16, 2018 Deposition of Jesse Yang, 45:18-45:21.

⁴⁵² Jarosz Report, ¶ 322 (p. 137) (emphasis added).

⁴⁵³ Jarosz Report, ¶ 26 (p. 9).

SEAGATE	Revenue		Gross Profit		Operating Profit	
FY	\$	%	\$	%	\$	%
2002	\$ 6,087,000,000	na	\$ 1,593,000,000	26.17%	\$ 374,000,000	6.14%
2003	\$ 6,486,000,000	6.55%	\$ 1,727,000,000	26.63%	\$ 691,000,000	10.65%
2004	\$ 6,224,000,000	-4.04%	\$ 1,459,000,000	23.44%	\$ 444,000,000	7.13%
2005	\$ 7,553,000,000	21.35%	\$ 1,673,000,000	22.15%	\$ 722,000,000	9.56%
2006	\$ 9,206,000,000	21.89%	\$ 2,137,000,000	23.21%	\$ 874,000,000	9.49%
2002-2006	\$ 35,556,000,000		\$ 8,589,000,000	24.16%	\$ 3,105,000,000	8.73%
2007	\$ 11,360,000,000	23.40%	\$ 2,185,000,000	19.23%	\$ 614,000,000	5.40%
2008	\$ 12,708,000,000	11.87%	\$ 3,205,000,000	25.22%	\$ 1,376,000,000	10.83%
2009	\$ 9,805,000,000	-22.84%	\$ 1,410,000,000	14.38%	\$ (2,665,000,000)	-27.18%
2010	\$ 11,395,000,000	16.22%	\$ 3,204,000,000	28.12%	\$ 1,740,000,000	15.27%
2011	\$ 10,971,000,000	-3.72%	\$ 2,146,000,000	19.56%	\$ 806,000,000	7.35%
2012	\$ 14,939,000,000	36.17%	\$ 4,684,000,000	31.35%	\$ 3,108,000,000	20.80%
2013	\$ 14,351,000,000	-3.94%	\$ 3,940,000,000	27.45%	\$ 2,091,000,000	14.57%
2014	\$ 13,724,000,000	-4.37%	\$ 3,846,000,000	28.02%	\$ 1,776,000,000	12.94%
2015	\$ 13,739,000,000	0.11%	\$ 3,809,000,000	27.72%	\$ 2,058,000,000	14.98%
2016	\$ 11,160,000,000	-18.77%	\$ 2,615,000,000	23.43%	\$ 445,000,000	3.99%
2017	\$ 10,771,000,000	-3.49%	\$ 3,174,000,000	29.47%	\$ 1,054,000,000	9.79%
2007-2017	\$ 134,923,000,000		\$ 34,218,000,000	25.36%	\$ 12,403,000,000	9.19%
Delta			\$ 1,625,648,583	1.20%	\$ 620,574,671	0.46%

TABLE 6.1

158. The foregoing are further examples that show Mr. Jarosz attempting to inject information into this case that he knows is both unrelated to the undisputed facts of this case, as well as misleading, and largely irrelevant.

G. Mr. Jarosz’ Contention that I “should have never begun with HGA Demand data” and Instead, “should have begun with HDD Sales data” is Wrong

159. Mr. Jarosz’ contention that I “should have never begun with HGA Demand data”⁴⁵⁴ and instead, “should have begun with HDD Sales data ... [which] represent actual [HDD] shipments”⁴⁵⁵ is wrong for the following reasons:

1. Seagate’s HGA Demand as Reported on Yang Deposition Exhibit No. 5 (SEA03336536, Row 45) Reflects Seagate’s Production of HGAs

160. Seagate’s 30(b)(6) witness Jesse Yang testified that HGA Demand reported on Yang Deposition Exhibit No. 5 (SEA03336536, Row 45) reflects Seagate’s actual production of HGAs:

⁴⁵⁴ Jarosz Report, ¶ 219 (p. 98).

⁴⁵⁵ Jarosz Report, ¶ 220 (p. 98).

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161. Mr. Yang's testimony is crystal clear. In contrast, Mr. Jarosz attempts to inject confusion based on his July 12, 2018 conversation with Seagate's Dan Floeder, four (4) days before his report was filed, and references to p. 171 of Mr. Yang's deposition transcript (without specific citation). [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 460 [REDACTED]

[REDACTED]

[REDACTED] Furthermore, Mr

⁴⁵⁶ February 16, 2018 30(b)(6) Deposition of Jesse Yang (Seagate), 171:11-171:21.

⁴⁵⁷ February 16, 2018 30(b)(6) Deposition of Jesse Yang (Seagate), 171:23-172:11.

⁴⁵⁸ February 16, 2018 30(b)(6) Deposition of Jesse Yang (Seagate), 172:12-172:17.

⁴⁵⁹ February 16, 2018 30(b)(6) Deposition of Jesse Yang (Seagate), 172:19-172:24.

⁴⁶⁰ Jarosz Report, ¶ 219 (p. 98). *Citing* “Conversation with Floeder [Dan Floeder, July 12, 2018]. *See also* Yang Deposition, at 171.”

Jarosz does not acknowledge the timing issues inherent in a comparison of HGA production and HDD sales, and the fact that Seagate’s HGA production necessarily occurs *before* Seagate’s HDD sales. As such, Seagate’s HGA production would include units that are in Seagate’s supply chain and will be consumed in Seagate’s HDD production process in subsequent periods.

162. For the foregoing reasons, Mr. Jarosz’ commentary is unsupported and speculative, wrong, confusing and misleading.

2. Use of Seagate’s HGA Demand Data is Proper Because it Most Closely Aligns the Royalty Base with the Alleged Infringement

163. Use of Seagate’s HGA Demand data is proper because it most closely aligns the Royalty Base with the alleged infringement. In contrast, using HDD Sales data, as Mr. Jarosz suggests, would introduce distortions into the Royalty Base at the both the beginning and end of the damages period. For example, at the beginning of the damages period, using HDD Sales data would *include* HDDs that have *non-infringing* HGAs made *before* the damages period started. At the end of the damages period, the situation is the reverse; using HDD sales would *exclude* HGAs that were made *before* the expiration of the ’988 Patent included in HDDs sold *after* the ’988 Patent expired.

164. Seagate’s HGA Demand data properly accounts for all of the HGAs that Seagate has made during the claimed damages period for which data is available, which in my opinion constitute units that should be included in the Royalty Base.

3. Mr. Jarosz Contention that I “should have begun with the HDD sales data ... [which] represents actual [HDD] shipments” is wrong

165. Mr. Jarosz contention that I “should have begun with the HDD sales data ... [which] represents actual [HDD] shipments” is wrong because it would introduce distortions into the Royalty Base, as noted above. [REDACTED]

[REDACTED]⁴⁶¹ [REDACTED]
[REDACTED]
[REDACTED]

166. [REDACTED]
[REDACTED]⁴⁶² and suggests that this is another reason why HGA Demand should not be used. This claim, however, is based on Mr. Jarosz mischaracterization of

⁴⁶¹ Jarosz Report, ¶ 220 (p. 98).

⁴⁶² Jarosz Report, ¶ 255 (p. 111).

Mr. Shay's deposition testimony and appears to be inconsistent with the information set forth in my Initial Report regarding Seagate's supply chain⁴⁶³ and the Seagate slide decks that are cited therein,⁴⁶⁴ and other documents.⁴⁶⁵ For example, Seagate's October 2004 "Seagate Inbound Supply Chain – Demand Driven Supply Chain Advantages" slide deck highlighted:

- **"Seagate's Inbound Supply Chain – Demand/Supply Visibility, real-time visibility, ...;"**⁴⁶⁶
- **"End-to-End visibility and transparency using Web Portals;"**⁴⁶⁷

⁴⁶³ Lawton Report, ¶¶ 359-372 (pp. 199-212).

⁴⁶⁴ See, e.g., Teh Chit Pin (Seagate), "Improving Supply Chain Efficiency Through eBusiness Collaboration," *Seagate*, November 7, 2001, available at <http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN007628.pdf>. "Seagate Inbound Supply Chain – Demand Driven Supply Chain Advantages," *Seagate*, October 2004, available at <https://www.slideshare.net/TheSupplychainniche/seagate-inbound-supply-chain-demand-driven-supply-chain>. Irina Popova, "Channel Data Stewardship, Business Operations – Customer Business Capabilities, Seagate Technology," *Seagate*, <https://www.slideshare.net/ChristinaAzzam/seagate-68591586>. Nicholas Berg, "Sensor Overload! Taming The Raging Manufacturing Big Data Torrent," *Seagate*, November 2016, available at <https://www.slideshare.net/seelingc/seagate-sensor-overload-taming-the-raging-manufacturing-big-data-torrent>.

⁴⁶⁵ Shoshanah Cohen, Joseph Roussel, *Strategic Supply Chain Management – The Five Disciplines for Top Performance*, (New York: McGraw-Hill Companies, Inc., 2005), pp. 249-257, available at <http://www.mim.ac.mw/books/Strategic%20Supply%20Chain%20Management.pdf> (pp. 249-257: "Seagate Technology Profile: Real-Time Response to Demand." At p. 252: "By integrating electronically with its factories and suppliers, Seagate eliminates the touch points that slow things down and lead to errors. Over 160 suppliers are connected, with a direct view to Seagate's daily consumption rates. ... To make this work, Seagate partners with e2open to set up a business-to-business (B2B) supply chain hub to communicate real-time demand and immediate supplier acknowledgment. e2open worked with suppliers that already used electronic data interchange (EDI) to translate their feedback into the RosettaNet signals that Seagate uses." At p. 253: "This multi-tiered visibility—the ability to see up and down the supply chain—is a critical component of Seagate's supply chain strategy."). Barbara Jorgensen, "Seagate Moves to Demand-Driven Supply Chain," *EPSNews*, December 15, 2015, available at <https://epsnews.com/2015/12/15/seagate-moves-demand-driven-supply-chain/> ("According to e2open, Seagate's customer now sends a signal to pull a part from the VMI/SMI hub that Seagate operates on behalf of its customers. If finished goods inventory drops too low in the JIT hub, a signal is sent to Seagate's plants, which send a signal to the VMI/SMI hub for components, which in turn sends a signal to Seagate's suppliers. Material is then shipped to the 3PL VMI/SMI hubs and on to Seagate's plants, which builds the finished good product for shipping to the customer-facing JIT hub. As a result of its real-time exchange of actual pull information, Seagate can now build to actual pulls while planning to forecast.").

⁴⁶⁶ "Seagate Inbound Supply Chain – Demand Driven Supply Chain Advantages," *Seagate*, October 2004, Slide 8 of 31, available at <https://www.slideshare.net/TheSupplychainniche/seagate-inbound-supply-chain-demand-driven-supply-chain>.

⁴⁶⁷ Lawton Report, ¶ 363 (p. 202). Citing "Seagate Inbound Supply Chain – Demand Driven Supply Chain Advantages," *Seagate*, October 2004, Slide 31 of 31, available at <https://www.slideshare.net/TheSupplychainniche/seagate-inbound-supply-chain-demand-driven-supply-chain>.

- **“The bottom line: Supply Chain Success through Results – Real-time information flow: Re-plan twice/week, execute daily 90M parts, Global business visibility: 212 suppliers, 7 JIT Hubs, 100% Direct, 35 POS ...”**⁴⁶⁸

167. In summary, and for the foregoing reasons, Mr. Jarosz’ contentions are unsupported, wrong, confusing and misleading.

H. Mr. Jarosz’ Contention that it is “Unclear” Whether I “Fully Accounted” for Seagate’s Purchase of HGAs from TDK is both Speculative and Misleading

168. Mr. Jarosz’ contention that it is “unclear” whether I “fully accounted” for Seagate’s purchase of HGAs from TDK⁴⁶⁹ is both speculative and misleading. As I noted in my Initial Report, Seagate’s HGA Demand data is incomplete.⁴⁷⁰ In particular, there is no dispute that Seagate did not provide HGA Demand data for the period April 29, 2010 through December 31, 2012.⁴⁷¹

169. The fact that my analysis includes *only* Seagate’s internally produced HGAs during the period January 2013 through December 2017 is clear from Mr. Jarosz’ ¶ 217, footnote 525 where he states: “By summing only ‘Internal Volume,’ Ms. Lawton appeared to try to account for and remove from the royalty base HGAs that were purchased by Seagate from TDK during the period January 2013 through December 2017.”⁴⁷²

170. Mr. Jarosz’ criticism relates only to the period April 2010 through December 2012. Because Seagate failed to produce HGA Demand data for this period, I estimated Seagate’s HGA unit during that period based on the only available information, Seagate’s HDD sales. My estimate is shown in **Figure 6.2**, below.

⁴⁶⁸ “Seagate Inbound Supply Chain – Demand Driven Supply Chain Advantages,” *Seagate*, October 2004, Slide 21 of 31, *available at* <https://www.slideshare.net/TheSupplychainniche/seagate-inbound-supply-chain-demand-driven-supply-chain>.

⁴⁶⁹ Jarosz Report, ¶ 218 (p. 97-98).

⁴⁷⁰ Lawton Report, ¶ 1017 (p. 592).

⁴⁷¹ Lawton Report, ¶ 1017 (p. 592).

⁴⁷² Jarosz Report, ¶ 217 (p. 97, footnote 525).

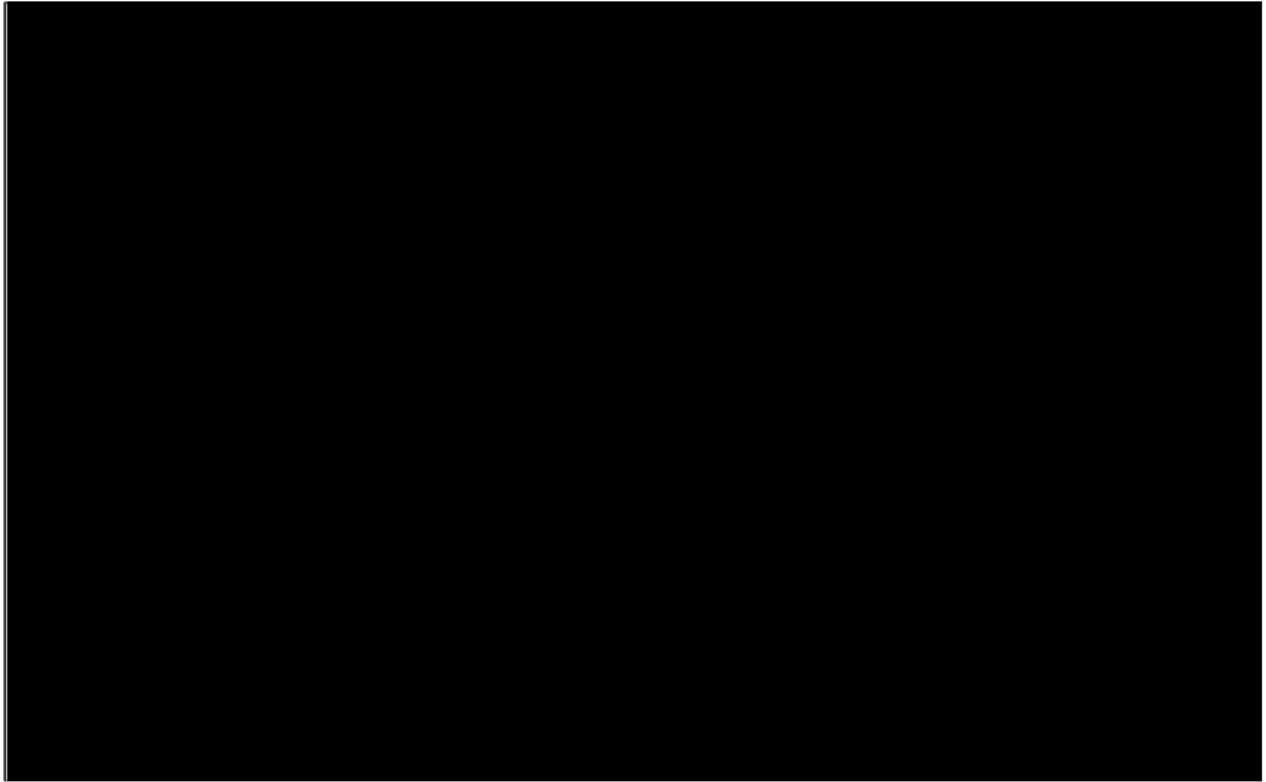


FIGURE 6.2

171.

Mr. Jarosz, however, offers no facts in support of his speculation. For example, he apparently did not discuss the issue with Seagate personnel, nor did he seek to obtain Seagate's HGA Demand data during the period April 29, 2010 and December 31, 2012. In addition, Seagate has known since at least February 16, 2018 (the date of Jesse Yang's deposition) that LMS was focused on this information and the fact that Seagate had not produced HGA Demand data prior to 2013.⁴⁷⁴ Nonetheless, both before and after my Initial Report was filed April 30, 2018, Seagate did not produce this data.

⁴⁷³ Jarosz Report, ¶ 218 (pp. 97-98).

⁴⁷⁴ Lawton Report, ¶ 1017 (pp. 592-593). *See also* February 16, 2018 Deposition of Jesse Yang.

172. The issue Mr. Jarosz complains about is the direct result of Seagate's failure to produce its HGA Demand data for periods prior to 2013. The issue could be cleared up, had Seagate produced the data, which it did not do. Thus, Mr. Jarosz' criticism is both speculative and misleading.

I. Mr. Jarosz' Criticisms of My Royalty Bases Focus on Estimates that were Necessary because Seagate Did Not Produce Certain Data and Information

173. Mr. Jarosz' criticisms of my Royalty Bases focus on estimates that were necessary because Seagate did not produce certain data and information. I understand that a defendant's failure to keep records or provide information will not enable it to leverage the lack of data or information in an effort to limit a damages claim.⁴⁷⁵
174. Mr. Jarosz does not dispute the fact that Seagate either did not produce or allegedly does not have:
- a) HGA sales data because "Seagate does not sell 'HGAs' as a component in the U.S."⁴⁷⁶
 - b) Wafer level slider sales price information because Seagate [REDACTED]
[REDACTED]⁴⁷⁷
 - c) Seagate's HGA and HSA transfer pricing analyses.⁴⁷⁸

⁴⁷⁵ *Westinghouse Co. v. Wagner Mfg. Co.*, 225 U.S. 604, 621-622, (S.Ct. 1912) ("In the present case the infringer's conduct has been such as to preclude the belief that it has derived no advantage from the use of plaintiff's invention. . . . In these circumstances, upon whom is the burden of loss to fall? We think the law answers this question by declaring that it shall rest upon the wrongdoer, who has so confused his own with that of another that neither can be distinguished. It is a bitter response for the court to say to the innocent party, 'You have failed to make the necessary proof to enable us to decide how much of these profits are your own;' for the party knows, and the court must see, that such a requirement is impossible to be complied with. The proper remedy to be applied in such cases is that stated by Chancellor Kent in *Hart v. Ten Eyck*, 2 Johns. Ch. (N.Y.) 62, 108, where he said: 'The rule of law and equity is strict and severe on such occasion. . . . All the inconvenience of the confusion is thrown upon the party who produces it, and it is for him to distinguish his own property or lose it.'").

⁴⁷⁶ Jarosz Report, ¶ 213 (p. 94) (no citation). See also February 15, 2018 Deposition of Patrick Shay, [REDACTED]
[REDACTED]

⁴⁷⁷ February 15, 2018 Deposition of Patrick Shay, 144:14-144:19. February 16, 2018 Deposition of Jesse Yang, 191:16-191:18 [REDACTED]
[REDACTED]

⁴⁷⁸ See, e.g., February 15, 2018 Deposition of Patrick Shay, 68:7-68:11.

- d) Data regarding Seagate's purchases of HGAs from TDK⁴⁷⁹ during at least the period prior to 2013.
- e) Data that shows "whether a particular head [used in a particular device] came from Seagate Technology LLC or Seagate Technology (Ireland)."⁴⁸⁰
- f) Data to identify sales to [U.S.-based OEM] customers outside the U.S. that are based in the U.S.⁴⁸¹
- g) Information that would enable me to correlate slider shipments to products.⁴⁸²

175. Mr. Jarosz criticizes my estimates that were necessary because of Seagate's failure or inability to provide important data and information and speculates that my estimates "**could** substantially overstate the royalty base."⁴⁸³ Mr. Jarosz' summary states that "each of her assumptions and calculations suffer from methodological and conceptual flaws that renders the quantities unreliable and leads to substantial overstatement of any reasonable measure of damages."⁴⁸⁴

⁴⁷⁹ See, e.g., February 15, 2018 Deposition of Patrick Shay, [REDACTED]

⁴⁸⁰ Jarosz Report, [REDACTED]

⁴⁸¹ Jarosz Report, ¶ 224 (p. 100).

⁴⁸² Jarosz Report, ¶ 232 (p. 103).

⁴⁸³ Jarosz Report, ¶ 237 (p. 105).

⁴⁸⁴ Jarosz Report, ¶ 238 (p. 105).

176. Based on Mr. Jarosz Report, it does not appear that he undertook any investigative steps in response to my discussion of Seagate’s supply chain,⁴⁸⁵ to determine what Seagate data or information is available that could address the foregoing data and information that is currently unavailable. In fact, Mr. Jarosz knows that at least some of the foregoing data is available (*i.e.*, at least customer data) given that Seagate produced such data in the *Siemens* case, and in this case, Seagate has selectively produced certain customer data that was advantageous to it. Instead, Mr. Jarosz attempts to leverage Seagate’s failure or alleged inability to provide data and information to Seagate’s advantage and asserts that “[w]ithout the necessary data to identify HGAs or downstream HDDs that contain allegedly infringing components – information that is not tracked by Seagate – it is not possible to accurately determine the quantity of unit sales that should be included in the royalty base.”⁴⁸⁶
177. In addition, Mr. Jarosz did not undertake any substantive analysis directed to estimating the alleged potential “substantial overstate[ment of] the royalty base.”⁴⁸⁷ ***And, the analysis that Mr. Jarosz does present proves the opposite.*** For example, according to Mr. Jarosz, the purported “test” he describes at ¶ 236 purportedly undermines my Scenario 3 and Scenario 4 Royalty Bases. Mr. Jarosz “test” is based on *product counts*—not *unit volumes*. Mr. Jarosz “test” examines product counts noting that the wafer level sliders for 29 of 56 (51.78%) of Accused Product families were fabbed exclusively in **Northern Ireland**, and 17 of 56 (30.36%) of Accused Product families were fabbed exclusively in **Minnesota**.⁴⁸⁸ For the remaining 10 of 56 (17.86%) of Accused Product families, “wafer level sliders originating from Minnesota accounted for 6 percent to 81 percent of the products’ requirements.”⁴⁸⁹ While the *text* of the Jarosz Report claims that the results of this “test” purportedly *undermines* my Scenario 3 and Scenario 4 conclusions (which it doesn’t)—the *analysis* Mr. Jarosz cites at **Tab16** *confirms* the reasonableness of my overall opinion and establishes that it is, in fact, my damages opinion is *conservative*.
178. As noted above, there is a one-to-one correlation between the number of HGAs and wafer level sliders. That is, each HGA includes only one slider. Mr. Jarosz’ **Tab 16** shows that when compared

⁴⁸⁵ Lawton Report, ¶ 359-372 (p. 199-212).

⁴⁸⁶ Jarosz Report, ¶ 222 (p. 99).

⁴⁸⁷ Jarosz Report, ¶ 237 (p. 105).

⁴⁸⁸ Jarosz Report, ¶ 236 (pp. 104-105).

⁴⁸⁹ Jarosz Report, ¶ 236 (pp. 104-105).

to my analysis for the period from April 2010 to December 2017, Seagate produced *more* wafer level sliders in total than the HGAs included in my analysis ([REDACTED]), and that a *higher* percentage of the wafer level sliders were manufactured in Minnesota (32.3% v. my estimate of 30.0%), as shown in **Table 6.3**, below.

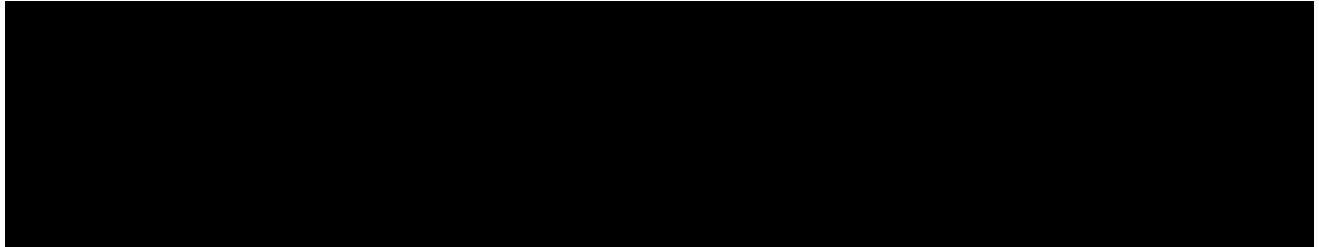


TABLE 6.3

VII. “JAROSZ ANALYSIS”

179. The “Jarosz Analysis” section of the Jarosz Report is based on his assumption that the claimed invention of the ’988 Patent has little, if any, value, and the alleged “administrative difficulties of using running royalty licenses”⁴⁹⁰ which he claims augers for a lump-sum payment. If the fact finder determines that his contentions are either unsupported and/or wrong, then Mr. Jarosz’ opinion is irrelevant. In addition, in this case, Mr. Jarosz attempts to “recycle” his opinion in the *Siemens AG v. Seagate Technology, LLC* litigation which was focused on LMR *read* heads in the HDD’s market transition to GMR during the period 1997 to 1999—years before the October 2006 hypothetical negotiation in this case focused on PMR *write* heads, and ignores the high stakes and economic significance of PMR and the HDD market’s transition to PMR. In short, Mr. Jarosz’ opinion in this case is a Seagate-centric analysis that largely ignores the circumstances of *this case*, and does not substantively address either the Income Approach (*i.e.*, Cost Savings) or Cost Approach. Mr. Jarosz’ application of the Market Approach is based on the alleged comparables that he relied on in the *Siemens AG v. Seagate Technology LLC* case, which I addressed in detail in my Initial Report. The Jarosz Report presents little, if any, new information and data.
180. Many of the defects and deficiencies in Mr. Jarosz’ work and opinions have already been discussed in detail, and will not be repeated again in this section.

A. Mr. Jarosz Does Not Offer Any Opinion Assuming that the Claimed Invention of the ’988 Patent is Critical Technology that Helped Enable PMR

181. Mr. Jarosz’ contention that I allegedly “overstated the economic contribution and value of the ’988 Patent”⁴⁹¹ is based on his contention that the benefits of the claimed invention of the ’988 Patent

⁴⁹⁰ See, e.g., Jarosz Report, [REDACTED]

⁴⁹¹ Jarosz Report, ¶ 5 (p. 2).

are “*de minimis* at best.” Mr. Jarosz offers no opinion assuming that the claimed invention of the ’988 Patent is critical technology that helped enable PMR—as Dr. Coffey opined.

B. Mr. Jarosz Attempts to “Recycle” his Prior Opinion in the *Siemens AG v. Seagate Technology, LLC* case

182. In this case, Mr. Jarosz attempts to “recycle” his prior opinion in the *Siemens AG v. Seagate Technology, LLC* case—and offers little, if any, new information and data. My Initial Report addressed each of Mr. Jarosz’ alleged Market Approach comparables in detail. Excluding the litany of Mr. Jarosz’ false claims and misrepresentations discussed in detail previously—he does not substantively dispute the facts set forth in my Initial Report.

C. Mr. Jarosz Did Not Present Seagate’s *Ex-Ante* Forecast of its Expected Use of the ’988 Patent in October 2006

183. When a reasonable royalty is based on a lump sum, it is estimated based on *expected sales*.⁴⁹²

184. “[W]illing parties often arrive at lump sum license payments through negotiations over the basic math of a revenue base times a royalty rate. In other words, in arm’s length bargaining the parties frequently forecast revenues for the covered products over the life of the license, apply some mutually acceptable royalty rate to that amount, and then factor in appropriate discounts (for example, to reflect the fact that the patent holder is receiving the entire license payment upfront rather than over time) to arrive at the ultimate lump sum amount to be paid by the licensee.”⁴⁹³

185. The December 2010 Acacia-Samsung analysis is an example of the “basic math” that is typical and entails a royalty rate applied to a forecast of units typical in order to determine the amount of a lump sum royalty payment. In this case, however, Mr. Jarosz offers no such analysis that reflects *Seagate’s* expectations in October 2006. In fact, Mr. Jarosz provides little, if any, discussion regarding the circumstances in October 2006 and Seagate’s *ex ante* forecast that would form the basis of such lump sum. In addition, Mr. Jarosz asserts that “it would be administratively

⁴⁹² See, e.g., *LinkCo, Inc. v. Fujitsu Ltd.*, 232 F.Supp 2d 182, 188 (S.D.N.Y. 2002) (“A reasonable royalty may be computed in various ways, including a lump-sum royalty based on expected sales or a running royalty based on a percentage of actual sales. The choice of the proper form of the royalty is dependent upon what would have been the most likely agreement during the hypothetical negotiation.”).

⁴⁹³ Anne Layne-Farrar, “The Patent Damages Gap: An Economist’s Review of U.S. Statutory Patent Damages Apportionment Rules,” *SSRN*, January 2017, p. 20, *available at* https://www.researchgate.net/publication/315811003_The_Patent_Damages_Gap_An_Economist's_Review_of_US_Statutory_Patent_Damages_Apportionment_Rules.

burdensome (if not impossible), both *ex ante* and *ex post*, to determine the number of individual HGAs or HDDs” that would form the basis of a damages claim.⁴⁹⁴ This claim is undercut by the fact that Seagate has produced slider, HGA and HDD data in this case.

186. Instead, Mr. Jarosz’ opinion is based on the false premise that running royalties are purportedly not paid in the HDD industry. He attempts to bolster his claim by highlighting the alleged “administrative difficulties of using running royalty licenses”⁴⁹⁵ (based on his misrepresentation of Mr. Shay’s deposition testimony, as discussed previously). Mr. Jarosz then claims that the foregoing augurs for a lump-sum payment. Mr. Jarosz, however, fails to acknowledge that there are trade-offs between lump-sums and reasonable royalty payment structures and that lump-sum payments have their own “**administrative difficulties**” and the attendant risks. For example, in the 2008 Bessy, *et al.* article that Mr. Jarosz cites—**lump-sum payments** require the licensee to undertake substantial analysis *ex ante* to project the expected use, duration of such use, and the associated value of the patented invention.

[L]icensees prefer to pay royalties instead of lump sum payments because the latter [*i.e.*, lump sum payments] oblige them [licensees] to make greater effort in measurement and assessment *ex-ante* and induce tremendous risks (because of the uncertainty concerning the actual value of the technology and the licensee’s ability to efficiently implement it in his products or processes).⁴⁹⁶

...

In this respect, lump sum payment gives purchasers an incentive to engage in extensive presale measurement of the exact value of the technology that is licensed,

⁴⁹⁴ Jarosz Report, ¶ 255 (p. 111).

⁴⁹⁵ See, e.g., Jarosz Report, [REDACTED]

⁴⁹⁶ Christian Bessy, Eric Brousseau, Stephane Saussier, “Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach,” p. 4, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

whereas royalties reduce incentives and require greater post-agreement monitoring and enforcement mechanisms, which are born by the seller.⁴⁹⁷

...

A royalty payment avoids the deadweight loss of *ex ante* measurement but replace it by a cost of *ex post* opportunism [such as the licensee's failure to pay].⁴⁹⁸

187. As such, lump sum licenses result in the licensee bearing the risk associated with overestimating the use and value of such use.⁴⁹⁹ In contrast, running royalties require *ex-post* monitoring and the licensor bears certain risks, namely the licensee's decision to discontinue use of the patented invention,⁵⁰⁰ the licensee's failure to pay royalties, and the licensee's under-reporting of royalties. Because the risks to the *licensee* are generally greater under the lump-sum payment structure, most patent licenses are running royalties in which both licensor and licensee share in the upside and downside risks.
188. Because Mr. Jarosz did not present Seagate's *ex-ante* forecast of its expected use of the claimed invention of the '988 Patent in October 2006, his work and opinions are fundamentally defective.

D. Mr. Jarosz' Reasonable Royalty Opinion is Defective

189. Mr. Jarosz' Reasonable Royalty Opinion is defective for a number of reasons. First, Mr. Jarosz presents no discussion or analysis of the circumstances at the time of the hypothetical negotiation in October 2006. Second, while Mr. Jarosz pays lip service to the Income Approach ("Incremental

⁴⁹⁷ Christian Bessy, Eric Brousseau, Stephane Saussier, "Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach," p. 6, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

⁴⁹⁸ Christian Bessy, Eric Brousseau, Stephane Saussier, "Payment Schemes in Technology Licensing Agreements: A Transaction Cost Approach," p. 7, *available at* <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.416.5989&rep=rep1&type=pdf>.

⁴⁹⁹ *See, e.g., Convolve, Inc. v. Dell, Inc., et al.*, Civil Docket No. 2:08-CV-244 (E.D. Tex.), Dkt. 553 (Trial Transcript, July 22, 2011 (Trial Day 6) – Keith Ugone, Ph.D., Cross), 118:13-118:20 ("Q. When parties sit at a hypothetical negotiation, if a lump sum is agreed on, the party taking the license is taking a risk that it might not decide to use the technology very much, and it might have overpaid, right? A. Absolutely. That's what I was trying to say. Q. Is it a yes? A. Yes. Yeah.").

⁵⁰⁰ *See, e.g., Convolve, Inc. v. Dell, Inc., et al.*, Civil Docket No. 2:08-CV-244 (E.D. Tex.), Dkt. 553 (Trial Transcript, July 22, 2011 (Trial Day 6) – Keith Ugone, Ph.D., Cross), 118:21-119:10 ("Q. A running royalty, though, actually gives the party taking the license the ability to control how much it pays by determining how long it uses the technology. Don't you agree? A. One consideration, yes. Q. And so with a running royalty, Hitachi would have been able to say, after a year or two: You know, I don't think this technology is very valuable; I'm going to stop using it, and it would not have had to pay Convolve anything more, correct? A. I agree. Q. And so a dollar a unit agreed upon in November of 2001 could have been stopped anytime Hitachi decided to the technology was not important, right? A. I will agree.").

Benefits”) and the Cost Approach,⁵⁰¹ he presents no substantive quantitative analysis regarding either.

190. Third, Mr. Jarosz’ *Georgia-Pacific* Factor Analysis⁵⁰² adds little, if anything, to his analysis because his discussion of most of the factors—at least Factor Nos. 1, 2, 4, 5, 7, 9, 10, 13—defers to his Market Approach assessment and claims that “this evidence was already taken into consideration in the Market Approach, [and thus,] it provides no additional guidance.”⁵⁰³ According to Mr. Jarosz, his “Market Comparables” and “Incremental Benefits” work in *MobileMedia* “embedded” all of the *Georgia-Pacific* factors except two: **Factor Nos. 3 and 13**.⁵⁰⁴

a) **Factor No. 3:** In *MobileMedia* on behalf of the *patentee*, Mr. Jarosz stated his opinion regarding Factor No. 3 as follows: “*Georgia-Pacific* Factor 3 says look at the nature and scope of the license. Here, there wouldn’t be uncertainties about whether the patent is valid and infringed. That increases the strength or power of the patent, it increases the rate that should be paid for the license. In the real world, we know Doro and Plantronics paid less than *MobileMedia* deemed appropriate. In the real world, there are uncertainties. [In the hypothetical negotiation] [t]hose uncertainties are removed.”⁵⁰⁵ In contrast, in this case on behalf of the *alleged infringer*, Seagate, Mr. Jarosz presented an expanded discussion of Factor No. 3 which included four (4) sub-parts: “**IP Covered by the License**” which he concluded “suggests a lower royalty is appropriate,” “**Exclusivity**” which he concluded “provided no additional guidance,” “**Legal Strength of IP**” which he concluded “suggests a higher royalty is appropriate,” and “**Territory and Customer Restrictions**” which he concluded “provides no additional guidance.”⁵⁰⁶ In this case, Mr. Jarosz did not provide a composite conclusion regarding the impact of Factor No. 3.

b) **Factor No. 13:** In *MobileMedia* on behalf of the *patentee*, Mr. Jarosz stated his opinion regarding Factor No. 13 as follows: “I also considered, in more detail, *Georgia-Pacific* Factor 13. That is called apportionment and asked us to consider are there other things that

⁵⁰¹ Jarosz Report, ¶ 239 (p. 106).

⁵⁰² Jarosz Report, ¶¶ 324-372 (pp. 138-152).

⁵⁰³ See, e.g., Jarosz Report, ¶ 363 (pp. 147-148) (*Georgia-Pacific* Factor No. 13). *Compare to MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 568:20-568:24 (“A. That [PDX-412] is a listing of the 15 *Georgia-Pacific* factors. The jury will probably be happy to know that we don’t need to talk about 13 of them. Those were already considered in the quantitative analysis that I did. Those evaluations were embedded in the [Market Comparables and Incremental Benefit] numbers that I did, ...”).

⁵⁰⁴ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 568:19-570:2.

⁵⁰⁵ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 569:1-569:12.

⁵⁰⁶ Jarosz Report, ¶¶ 334-341 (pp. 141-142).

contribute to the Apple iPhones? And of course there are. There are many others that contribute to ease of use, many others that contribute to driving the purchase decision. I know the polite ignore feature itself doesn't drive purchase decisions, it increases user satisfaction, it increases ease of use, but I don't have evidence that it alone drives consumer purchases. It indirectly impacts them but not directly. So I said these other factors have to be accounted for. That should – that suggests taking a number toward the lower end of the range under consideration.”⁵⁰⁷ In contrast, in this case on behalf of the *alleged infringer*, Seagate, Mr. Jarosz alleges that I did not perform an analysis that “properly apportion Seagate’s *profits* from the sale of Accused Products between the portion that is attributable to the alleged use of the patented technology and the portion that is attributable to other technology contributors.”⁵⁰⁸ This is another example of Mr. Jarosz’ “Straw Man Fallacy” “sleight of hand;” given that Mr. Jarosz knows that my analysis properly focuses on Seagate’s PMR head *cost savings*. Mr. Jarosz also cites Dr. Fullerton’s “*de minimis* at best” opinion again, and concludes that “as this evidence was already taken into consideration in the Market Approach, it provides no additional guidance here.”⁵⁰⁹

The foregoing shows that Mr. Jarosz approach depends on whether he was retained by the patentee or the alleged infringer. In my opinion, Mr. Jarosz’ Market Approach assessment is defective for all the reasons I have explained previously.

191.

[REDACTED]

[REDACTED] ⁵¹⁰ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] ⁵¹¹ Mr. Jarosz has deliberately

misrepresented the Censtor-Hitachi agreement, for the reasons I explained previously.

E. Mr. Jarosz’ Pre-Judgment Interest Opinion is Inconsistent with his Prior Opinion in a Prior Case on Behalf of a Plaintiff

192. In this case, on behalf of the Defendant, Seagate, Mr. Jarosz opined that “[s]hould the Court determine that prejudgment interest is due after a judgment is entered in this case, the appropriate

⁵⁰⁷ *MobileMedia Ideas, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Dkt. 743 (Trial Transcript, September 14, 2016 – John Jarosz, Direct), 569:13-570:2.

⁵⁰⁸ Jarosz Report, ¶ 362 (p. 147).

⁵⁰⁹ Jarosz Report, ¶¶ 363-364 (pp. 147-148).

⁵¹⁰ Jarosz Report, ¶ 370 (p. 151).

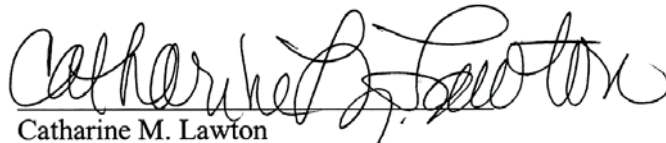
⁵¹¹ Jarosz Report, ¶ 371 (p. 151).

interest rate to use is the short-term Treasury bill rate.”⁵¹² According to Mr. Jarosz, “[s]ince LMS bears virtually no risk that Seagate cannot pay the judgment at issue here, the correct interest rate is a low, relatively risk-free rate.”⁵¹³ Consistent with the theme that runs throughout the Jarosz Report, Mr. Jarosz gives little, if any, consideration to the harm that LMS has experienced including financing costs and foregone investment opportunities.

193. In contrast, when Mr. Jarosz has been retained on behalf of a *plaintiff* litigating against a large corporate defendant, Mr. Jarosz has opined that the appropriate prejudgment interest rate is the prime rate. For example, in *MobileMedia Ideas LLC* [now IronWorks Patents] v. *Apple Inc.*, Mr. Jarosz’ client, *MobileMedia* claimed that the prejudgment interest rate the defendant, Apple, should pay is prime.⁵¹⁴

SIGNATURE

Respectfully submitted this 3rd day of August, 2018,



Catharine M. Lawton

⁵¹² Jarosz Report, ¶ 371 (p. 151).

⁵¹³ Jarosz Report, ¶ 375 (p. 152).

⁵¹⁴ *IronWorks Patents, LLC v. Apple, Inc.* (Civ. No. 10-258-SLR, D. Del.), Memorandum Order dated June 12, 2017, p. 28 of 30.

**CONTAINS CONFIDENTIAL ATTORNEY EYES ONLY
INFORMATION SUBJECT TO PROTECTIVE ORDER**

**UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF PENNSYLVANIA**

LAMBETH MAGNETIC STRUCTURES,
LLC,

Plaintiff,

v.

SEAGATE TECHNOLOGY (US)
HOLDINGS, INC. and SEAGATE
TECHNOLOGY LLC,

Defendants.

) Civil Action No. 2:16-cv-00538-CB

) Judge Cathy Bissoon

) **CONTAINS CONFIDENTIAL**
) **ATTORNEY EYES ONLY**
) **INFORMATION SUBJECT TO**
) **PROTECTIVE ORDER**

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2000 Q&A posted on Seagate’s website³²—a document that I cited³³

25. According to Dr. Kryder, Seagate’s Vice President of Research, as of August 2000 (a few months *after* Dr. Lambeth conceived the claimed invention of the ’988 Patent), the PMR media problem had already been solved, but the write head problem had not—and would require the claimed invention of the ’988 Patent, namely, “higher moment magnetic materials.” In August 2000, Dr. Kryder stated: **“We can make much more thermally stable media than we have today by increasing the coercivity. The problem is, we can’t write on the media if the coercivity is too high, because, the heads can’t produce sufficiently high magnetic fields to overcome the coercivity. That, in turn, is because we don’t have sufficiently high-moment magnetic materials for the write heads. So producing higher moment magnetic materials is one of our goals. That’s going to be a challenge because there are no known alloy materials with a substantially higher magnetic moment. The world has pretty well looked at all the potential magnetic materials out there in alloy form ...,”**³⁵ as shown in Figure 3.2, below:

³² “Questions and Answers with Mark Kryder,” *Seagate*, August 18, 2000, *available at* <https://web.archive.org/web/20000818005433/http://www.seagate.com:80/newsinfo/technology/research/D4b4.html> (earliest archive capture).

³³ Lawton Report, ¶ 198 (pp. 101-102).

³⁵ Lawton Report, ¶ 198 (pp. 101-102) (*citing* “Questions and Answers with Mark Kryder,” *Seagate*, August 18, 2000, *available at* <https://web.archive.org/web/20000818005433/http://www.seagate.com:80/newsinfo/technology/research/D4b4.html> (earliest archive capture) (emphasis added)).

62. My initial report sets forth in detail the facts that are relevant to the determination of LMS's damages, assuming liability, and connect such facts to my analyses and opinions. In summary, my analysis and opinions fit the facts in this case because it focuses on estimating the *cost savings* to which the '988 Patent contributes—as estimated and reported by Seagate's longtime CFO, Charles C. Pope, in January 2006,¹⁴⁵ shortly before the October 31, 2006 hypothetical negotiation date in this case.
63. In contrast, Mr. Jarosz relies on a highly selective and limited number of disjointed facts which confuse and obfuscate the central issues. This will be discussed in more detail below.

e) **My Methodology and Analysis Isolate the Incremental Value
“associated with the infringement” to the Extent Possible**

65. Mr. Jarosz recognizes that *Georgia-Pacific* Factor Nos. 8, 11, and 6 are directed to identifying “the benefits *associated with* infringement. ... Taken together, these considerations may establish an upper bound on the amount of reasonable royalty damages that might be awarded to the patent holder, as these considerations seek to quantify *all of the benefits* to the alleged infringer that are *associated with* the alleged infringement.”¹⁴⁷
66. In August 2015, Mr. Jarosz and his co-author stated: “In recent years, the Federal Circuit has emphasized the importance of isolating, to the extent possible, the specific incremental value contributed by the alleged infringement when assessing reasonable royalty damages.”¹⁴⁸ Mr. Jarosz, however, recognizes that “in practice, rarely can one identify the next best alternative to use of the IP, let alone accurately isolate the incremental benefit associated solely with the use of

¹⁴⁵ Lawton Report, ¶ 175 (p. 89) (*citing* “Seagate F206 (Qtr Ending Dec 30, 2005) Earnings Release Conference Call Transcript (STX),” *SeekingAlpha*, January 19, 2006, pp. 13-14 of 30.)

¹⁴⁷ John C. Jarosz, Michael J. Chapman, “The Hypothetical Negotiation and Reasonable Royalty Damages: The Tail Wagging the Dog,” *Stanford Technology Law Review*, Vol. 16, No. 3, Spring 2013, pp. 769-832, at 816 (emphasis in original).

¹⁴⁸ Michael J. Chapman, Ph.D., John C. Jarosz, “REBUTTAL: It’s Not An Inappropriate Reasonable Royalty Rule,” *Law360*, August 21, 2015, *available at* <https://www.law360.com/articles/694171/rebuttal-it-s-not-an-inappropriate-reasonable-royalty-rule>.

view of the market situation and high stakes in October 2006, it is unlikely that the risk and delays associated with attempting to develop an AANIA would have been acceptable to Seagate. The high risk and potential high reward are demonstrated by the following:

- a) As of September 2006, the HDD market was at an **“inflection point.”** James Cirico, Jr., Seagate’s EVP of Manufacturing Operations, stated: “We are at an inflection point in this industry. If I had to sum up the industry for the next 12 to 24 months in a word, it is ‘uncertainty.’”²⁰²
- b) The significance and importance of the PMR—described in April 2006 as **“the first major upgrade in recording data on disk drives since the first drive was created by IBM 50 years ago.”**²⁰⁴ In August 2006, PMR was described as **“the biggest revolution in hard disk drive technology ..., for sure.”**²⁰⁵
- c) The importance of the HDD’s market transition to PMR. For example, “[i]n May 2006, HGST’s Roger Wood stated that PMR was **‘[e]ssential to continued areal density growth.’**”²⁰⁸
- d) The importance of time-to-market in the HDD industry.²¹⁰ [REDACTED]
[REDACTED]²¹¹ Mr. Jarosz does not address

²⁰² Lawton Report, ¶ 871 (p. 513). Citing Rick Merritt, “Drive makers’ heads spinning as they juggle transitions,” *EE Times*, September 25, 2006, available at https://www.eetimes.com/document.asp?doc_id=1301641.

²⁰⁴ Lawton Report, ¶ 464 (p. 277). Citing Mac Thoo, “Seagate introduces Monster Hard Disk,” *Hard Disk Trend Blogspot*, April 27, 2006, available at http://hard-disk-trend.blogspot.com/2006_04_01_archive.html. See also Yoichiro Tanaka, “Perpendicular Recording Technology: From Research to Commercialization,” *Proceedings of the IEEE*, November 2008, available at http://ieeexplore.ieee.org/iee_pilot/articles/96jproc11/jproc-YTanaka-2004309/article.html#authors (“The transition from longitudinal recording to perpendicular recording is the first major recording scheme evolution in the history of the hard disk drive industry.”).

²⁰⁵ Lawton Report, ¶ 897 (p. 525). Citing “Analysis: Perpendicular Versus Horizontal Drive Technology,” *Network Computing*, August 10, 2006, available at <https://www.networkcomputing.com/careers/analysis-perpendicular-versus-horizontal-drive-technology/1584019899/page/0/1>.

²⁰⁸ Lawton Report, ¶ 464 (p. 277). Citing Roger Wood, Hisashi Takano, “Prospects for Magnetic Recording for the next 10 years,” *HGST*, May 10, 2006, Slide 18, available at <http://www.idema.org/wp-content/downloads/1535.pdf>.

²¹⁰ Lawton Report, ¶¶ 258-267 (pp. 143-149).

²¹¹ Lawton Report, ¶ 907 (Figure 11.5) (p. 531). Citing SEA00507193-209, at 202 [REDACTED]

“paid off well.”²¹⁶

- f) Seagate’s past experience with the high cost of TTM delays, for example, as recounted by Dr. Kryder in an April 2017 interview: “With the areal density going up so fast, **when they [Seagate] were late by three months they figured they’d lost a billion dollars in sales and that they couldn’t be late anymore.**”²²⁰

81. Mr. Jarosz report does not address any of the foregoing facts. Instead, Mr. Jarosz *ignores* the high stakes circumstances at the time of the hypothetical negotiation in October 2006 and makes the vague, conclusory claim (based on Dr. Fullerton) that available, acceptable non-infringing alternatives (“AANIA”) allegedly existed in October 2006—although Mr. Jarosz does *not* specifically identify any such alleged AANIAS.²²² This tactic has been criticized. According to the December 2016 *The Sedona Conference – Commentary on Reasonable Royalty Damages Determinations*, “conclusory assertions of proposed alternatives to the patented technology [] made after the close of fact discovery through a damages expert during the expert discovery period” should be avoided “[t]o prevent expense, delay, and prejudice [to the patentee] during the litigation proceedings, ...”²²³

²¹⁶ Lawton Report, ¶ 872 (p. 504). Citing “Oral History of Mark Kryder (Interviewed by Chris Bajorek)” *Computer History Museum*, April 14, 2017, p. 26 of 51, available at <http://archive.computerhistory.org/resources/access/text/2017/12/102738245-05-01-acc.pdf> (“**Bajorek:** -- Toshiba chose the conventional approach of – may have chosen – of not betting the whole business [on PMR], trying it in a low-risk product. I think you guys at Seagate chose to bet the business on it [PMR] and that was gutsy. **Kryder:** Yes, and it paid off well and the products showed that to us ‘cause we’d had drives for a long time and we were sampling them, and it was working; there wasn’t any question about it.”).

²²⁰ Lawton Report, ¶ 555 (p. 330). Citing “Oral History of Mark Kryder (Interviewed by Chris Bajorek)” *Computer History Museum*, April 14, 2017, p. 27 of 51, available at <http://archive.computerhistory.org/resources/access/text/2017/12/102738245-05-01-acc.pdf> (emphasis added). See also Lawton Report, ¶ 550 (p. 321) Citing Ephraim Schwartz, David Pendery, “Big challenge ahead for Seagate CEO,” *InfoWorld*, July 27, 1998, p. 14 (“[Steven] Luczo [Seagate’s President and COO in July 1998] continued. ‘And so in the course of nine months we probably lost in excess of \$1 billion in revenue.’”).

²²² Jarosz Report, ¶ 152 (pp. 64-65), ¶ 153 (p. 65).

²²³ Andrea Weiss Jeffries, Ed., “The Sedona Conference – Commentary on Reasonable Royalty Determinations,” *The Sedona Conference*, December 2016, p. 44, available at

CERTIFICATE OF SERVICE

I hereby certify that on the 7th day of September, 2018, I caused to be served true and correct copies of the papers listed below:

CORRECTED PAGES 8, 29, 40, AND 42 TO THE AUGUST 3, 2018
REPLY EXPERT REPORT OF CATHARINE M. LAWTON

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